Office Management
and AMERICAN BUSINESS

The Magazine of Administration and Systems • October 1960

Computers come to small businesses—via service centers
AMA conference will stress "new concept of administration"
How Midwest company cut clerical costs in order processing

EXTERIOR of Industrial Air Products Company.

M. A. GUDMAN, Vice President & Controller.

IN LESS THAN 2 YEARS, this National System pays for itself.

"Our *National* System saves us $4,950 a year... returns 52% annually on investment!"

—Industrial Air Products Co.
Portland, Oregon

"While a quick return on an investment in business machines is very necessary—information volume, flexibility, and operational dependability are also vital efficiency factors.

"Our National System performs most admirably in all these areas. Because of its speed, we now keep our records up-to-date and ready for immediate examination. This speed also eliminates the necessity for hiring additional bookkeeping personnel. Although we operate six branch plants, our centralized National System handles all records . . . on a wide variety of applications. Moreover, the continual reliability of our National System keeps down time to an absolute minimum.

"Our National System saves us $4,950 a year . . . returns 52% annually."

M. A. Gudman

Vice President & Controller

Your *business, too, can benefit from the many time- and money-saving features of a National System. Nationals pay for themselves quickly through savings, then continue to return a regular yearly profit. National's world-wide service organization will protect this profit. Ask us about the National Maintenance Plan. (See the yellow pages in your phone book.)* ☎

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ELECTRONIC DATA PROCESSING
NCR PAPER (NO CARBON REQUIRED)

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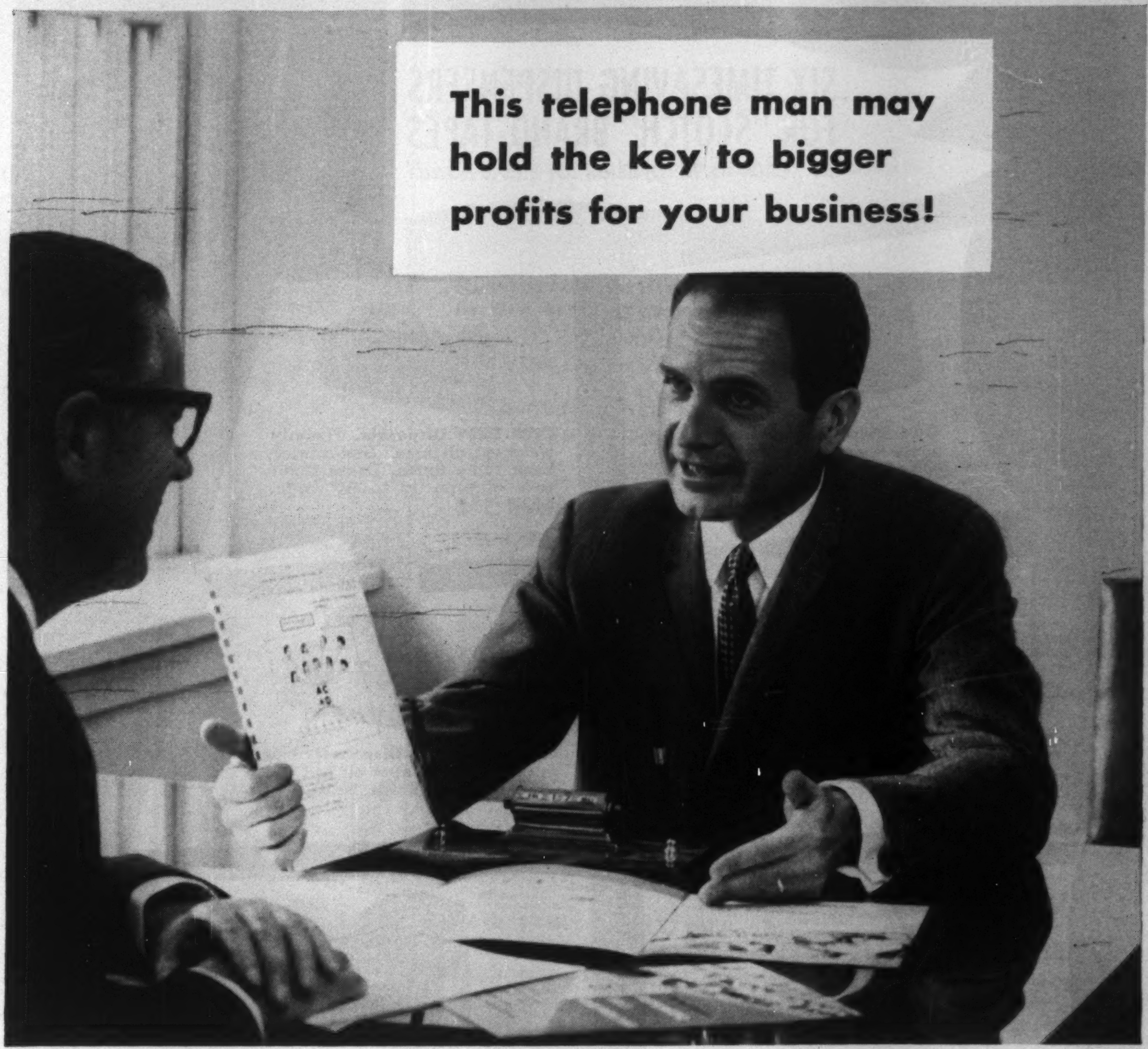
(Circle No. 1 on Reader Inquiry Card)



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"Will he try to sell me more equipment?"

If you need it—yes. He may end up merely showing you how to use the equipment you *have* to better advantage. But Bell System research has produced some outstanding new equipment and systems, such as the Call Director telephone at the right. If there's a place for them in your business—if they can definitely improve your operations and your profit picture—you'll *want* them.

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Just call your Bell Telephone business office. The Communications Consultant will visit you at your convenience.

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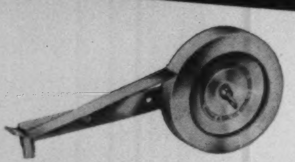

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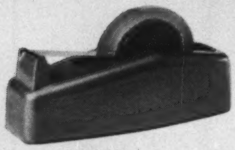

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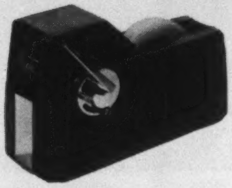

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MINNESOTA MINING AND MANUFACTURING COMPANY
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

(Circle No. 9 on Reader Inquiry Card)

Office Management
and AMERICAN BUSINESS

Office Management established 1940; *American Business* established 1930. This publication incorporates *System* magazine, founded in 1900, and *Business Equipment Topics*, founded in 1905.

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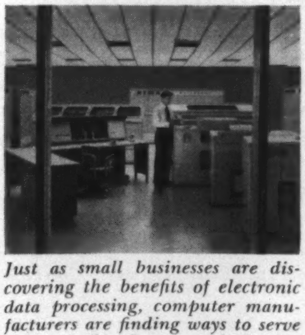

Just as small businesses are discovering the benefits of electronic data processing, computer manufacturers are finding ways to serve these needs. One way is service centers such as this Burroughs installation at Pasadena, Calif. See page 13 for the first article in a series on computer centers.

October, 1960
Volume XXI, Number 10

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So the boss turned the other cheek

(and promptly got it kissed, too)

THE KISS ON HIS LEFT CHEEK? That came for buying her Nu-Kote carbon paper—the original plastic-base carbon that gives letter perfect work, produces smudge-resistant copies, outlasts other carbons 3 to 1, and does all jobs with one weight and finish. THE KISS ON HIS RIGHT CHEEK? That's because he bought her Nu-Kote typewriter ribbon — Nu-Kote is the one ribbon that outlasts ordinary ribbons 3 to 1, comes on a universal spool for 140 different machines, and has a red portion which even reproduces in Thermo-Fax and Multilith processes. SEND COUPON TODAY! See how good your carbons and ribbons can be.

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(Circle No. 5 on Reader Inquiry Card)

Coming Events

ACME Meeting, Hot Springs, Va., September 20-October 2.
Sponsor: Association of Consulting Management Engineers.
Place: The Homestead.

SPAA Conference, New York, October 10-14.
Sponsor: Systems and Procedures Association of America.
Place: Commodore Hotel.

AMA Special Administrative Services Conference, New York, October 17-19.
Sponsor: American Management Association.
Place: Roosevelt Hotel

ARMA Annual Convention, Milwaukee, October 19-22.
Sponsor: American Records Management Association.
Place: Plankinton Hotel.

NMA Annual Convention, Atlanta, October 20-21.
Sponsor: The National Management Association.
Place: Dinkler-Plaza Hotel.

TIMS 7th Annual International Meeting, New York, October 20-22.
Sponsor: The Institute of Management Sciences.
Place: Hotel Roosevelt.

CIA Annual National Conference. San Francisco, October 22-26.
Sponsor: Controllers Institute of America.
Place: Hotel Fairmont.

NIGP Conference, Washington, D. C., October 23-26.
Sponsor: National Institute of Governmental Purchasing Agents.
Place: Shoreham Hotel.

OEA National Business Show, New York, October 24-28.
Sponsor: Office Executives Association.
Place: New York Coliseum.

NASS 18th Annual Convention, Philadelphia, October 30-31.
Sponsor: National Association of Suggestion Systems.
Place: Sheraton Hotel.

OEMI Business Equipment Exposition, Los Angeles, November 1-4.
Sponsor: Office Equipment Manufacturers Exhibits, Inc.
Place: Los Angeles Memorial Sports Arena.

FIRE
CUTTER M
and ASH
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HERE TODAY, GONE TOMORROW

TURPIN, MR. & MRS. GEORGE B.
Mr. and Mrs. George B. Turpin
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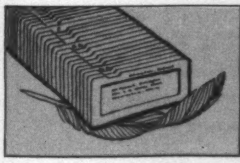
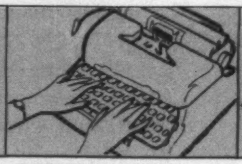
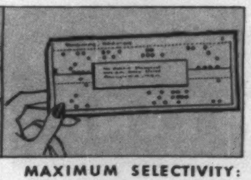
And there's an Elliott Addressing System for every size mailing list, from hundreds to millions designed to address mailing pieces from small size calling cards to mammoth broadsides.

ELLIOTT

35,000,000 Americans moved last year. The Elliott Addressing System easily keeps pace with your ever-changing mailing lists.


LIGHTWEIGHT — *a whole trayload of 125 stencils weighs only 8 ounces.*


TYPEWRITEABLE — *anyone who can run a typewriter can make stencils.*


MAXIMUM SELECTIVITY: *Elliott can automatically address your special classifications, eliminate all other names.*

(Circle No. 6 on Reader Inquiry Card)

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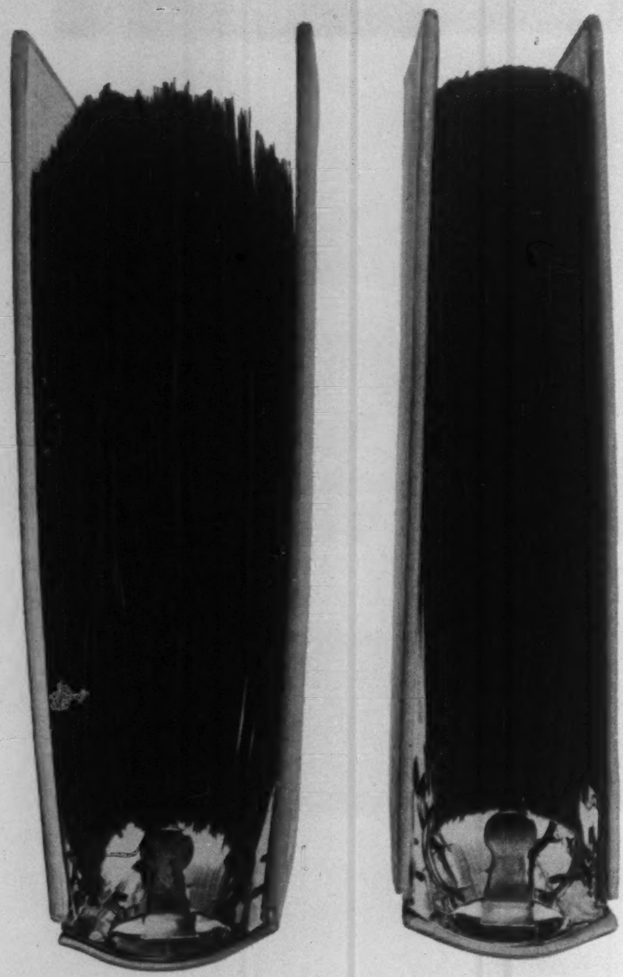
Company____________________

Type of Business____________________

Street & No.____________________

City__________ Zone_____ State__________



Binder with 75 ordinary sheet protectors

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Get up to 35% more sheets into ring binders with sheet protectors made of thin, lightweight Du Pont "Mylar"* polyester film.

They're tough . . . won't pull out at ring holes . . . won't yellow or become brittle with age . . . cut *replacement costs.*

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"Mylar" is Du Pont's registered trademark for its polyester film. Du Pont manufactures the base material—"Mylar"—not finished sheet protectors.

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. . . THROUGH CHEMISTRY

DU PONT
MYLAR®
POLYESTER FILM

(Circle No. 7 on Reader Inquiry Card)

Kentucky secretary lists 25 office hazards

Miss Mary Ellen Fielder, a Paducah (Ky.) secretary, has developed a list of office hazards that differs a little from the usual. It wasn't made up by a safety expert or an office equipment manufacturer. Miss Fielder compiled her check-list for office safety from observation and experience.

The list, published by The Dartnell Corporation, Chicago, in its monthly bulletin for business girls entitled "From Nine to Five," contains the following 25 danger signals that apply to many offices.

1. Typewriters not secured to desks;
2. Open desks or file drawers;
3. Heavy materials stored in top drawers;
4. Office machines too near edge of table or desk;
5. Glass tops with chipped or cracked edges;
6. Splintered or rough edges on wooden furniture;
7. Sharp edges on filing cabinet drawers or other furniture;
8. Unstable file cabinets or bookcases;
9. Obstructions in the aisle;
10. Loose fan or other overhead fixtures;
11. Broken office equipment;
12. Backs of chairs loose;
13. Worn chairs or those with broken casters;
14. Absentmindedness while using papercutters or closing drawers;
15. Cords that are frayed, loose, or not enclosed,
16. Scissors in desk without protective cover;
17. Razor blade or pins in paper clip bowl;
18. Ashtrays too near papers or wastebasket;
19. Unauthorized and hazardous hotplate arrangements;
20. Horseplay, practical jokes;
21. Uneven floors, loose rugs, or holes in floor covering;
22. Standing on a chair instead of using a stepladder to reach high objects;
23. Not using handrail on stairs;
24. Cracked or broken glass panes in doors and windows;
25. You!

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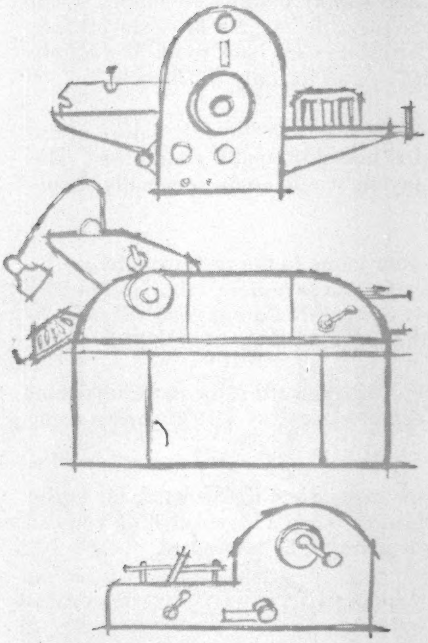

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Bergstrom's ODIN® office printing paper is a new product of contemporary paper technology. In mimeo, duplicator and bond finishes, in quiet-white and readable colors, ODIN® "gets things read."

This is a paper made for the reader and made for the machine that prints it. ODIN® – made by the fine paper company which has supplied America's school, law, encyclopedia and other great book publishers since 1904.

Advanced Bergstrom paper packaging saves paper (and hands and fingernails, too). The "courtesy" cartons are easy to open and completely re-usable. Each pack zips open and then becomes a pouch for neat, identifiable shelf storage of remaining paper. – Samples from your paper merchant, or wire . . .

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NEENAH, WISCONSIN

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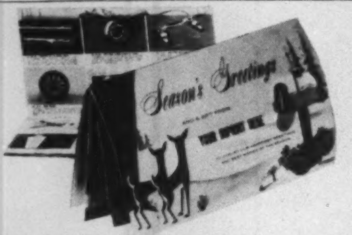

THIS GIFT GIVING IDEA IS SO SIMPLE

it's a wonder someone didn't think of it before . . .

If YOU have the problem of selecting the Christmas gifts that must please EVERY ONE of your employees, prospects or customers, the smartest way out is TO LET THEM PICK THEIR OWN GIFTS.

The above pictured GIFT-BOOKARD is the simple, sensible and economical way of doing just that. It enables you to say "Thank You" to anyone . . . without first trying to read their minds . . . and without the inevitable mistakes.

The Gift-Bookard is a combination of personalized Greeting Card, a registered Gift Certificate in the form of a postage paid reply card, and a colorful booklet offering recipients a choice of 24 impressive gifts.

The Gift-Bookard eliminates all work and worry on your part. All you do is order the exact quantity you need, whether 50 or 50,000. We imprint the covers (or you may design and print your own) and supply mailing envelopes. Each person who receives a Gift-Bookard from you picks the one gift he or she prefers, by mailing the attached Registered Gift Certificate card back to us. We supply the gifts, wrap them and ship them prepaid . . . all for only $6.50 each.

A special feature of the Gift-Bookard is the useful and worthwhile nature of the gifts, each of which is valued to $10. and is unconditionally guaranteed. The 24 gifts are shown in full color and almost anyone would enjoy personally choosing and using any of these beautiful gifts.

What's more, you have tastefully exposed your name to the recipients twice . . . once with the Gift-Bookard, then with the gift. You save time, labor and money through group purchasing and handling . . . you create lasting goodwill impressions on your customers, prospects or employees . . . all for the modest $6.50 price.

Fact is, leading executives have said that the Gift-Bookard is the most important new idea for solving the problems inherent in obligatory gift giving to come along in many a year.

The next move is yours. If you'd like to see a sample Gift-Bookard, fill in the coupon below and mail to us – no obligation of course. Or . . . possibly you can refer this ad to someone in your company who might be interested.

CLIP AND MAIL

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IMPORTANT FACTS TO KNOW . . .

The U. S. Senate, in an effort to close "loopholes" in existing tax laws, has recommended a clampdown on tax exemptions for business expenses. The amendment would LIMIT DEDUCTIBLE GIFTS TO A $10 VALUATION.
(This excerpt is from Page 1 of the N. Y. Herald Tribune of June 21st, 1960.)

Gallery of Gifts, Inc., 80 Park Ave., N. Y. 16, N. Y.

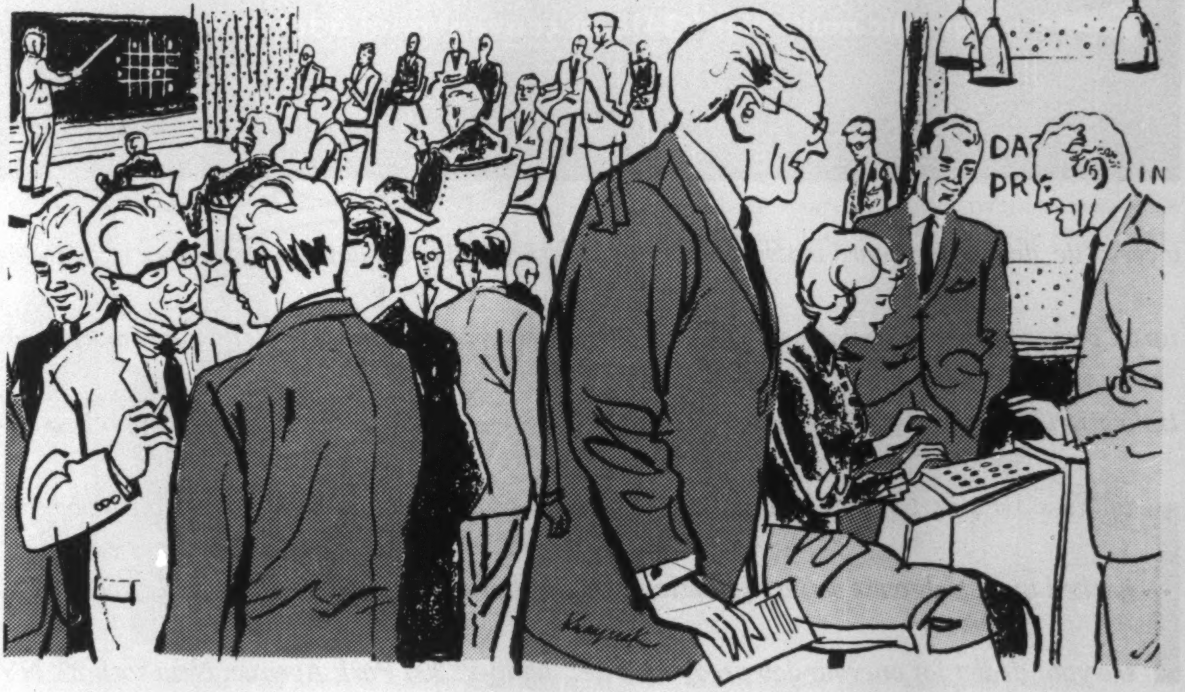
(Circle No. 20 on Reader Inquiry Card)

THE NEW "SEMESTER" OPENS

OCTOBER is upon us and once again, summer vacations over, "school" begins for businessmen even as it has for youngsters across the country. The school in this case is not the continuing day-in, day-out variety but rather the series of conferences, meetings, local and national conventions which are so prominent a part of the fall and winter business schedule.

There was a time when the educational aspects of such meetings were a fairly transparent excuse for a pleasant and highly sociable sojourn in a strange city, far from home and office. And in some fields, that probably still is true. But in the area of administration, the "down to business" aspects of association conferences are emphasized more strongly each year. This field is so dynamic, the changes that come arrive so quickly and in such numbers, that it's essential executives really work and learn at meetings simply to remain efficient at their ever-expanding jobs. It is significant that this trend is so strong that the National Business Show, which opens this month in New York, is no longer merely a display of equipment and supplies; it is accompanied by a week-long conference in which various speakers will explore the new concepts of administration brought about by the rapid technical advances in office and communications equipment. By the same token, the Business Equipment Exposition, to be held in Los Angeles next month, will not only serve as a showcase for new products, but will also have systems experts on hand to work with those attending the show in finding the best possible solutions to their individual data processing problems.

So it looks like a brisk fall semester for everyone in our field—and a productive and profitable one for diligent students.



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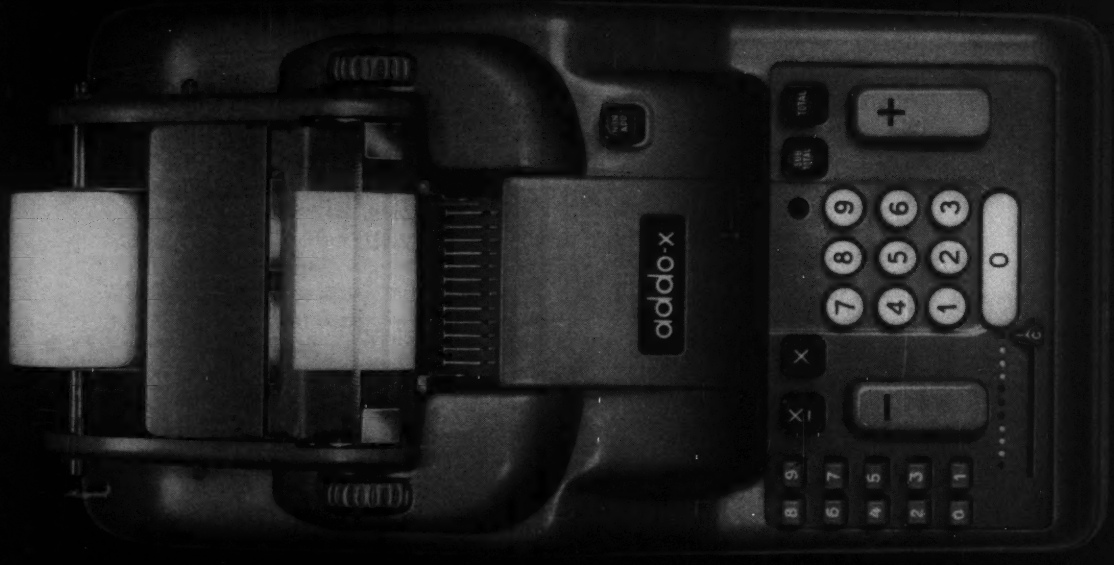

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see your dealer for on-your-job proof or write: "addo-x" 300 Park Avenue, New York 22, NY

(Circle No. 10 on Reader Inquiry Card)

Office Management
and AMERICAN BUSINESS

October 1960

COMPUTERS COME TO SMALL BUSINESS

Computer service centers promise electronic data processing for all American business

By JOHN A. BROWN

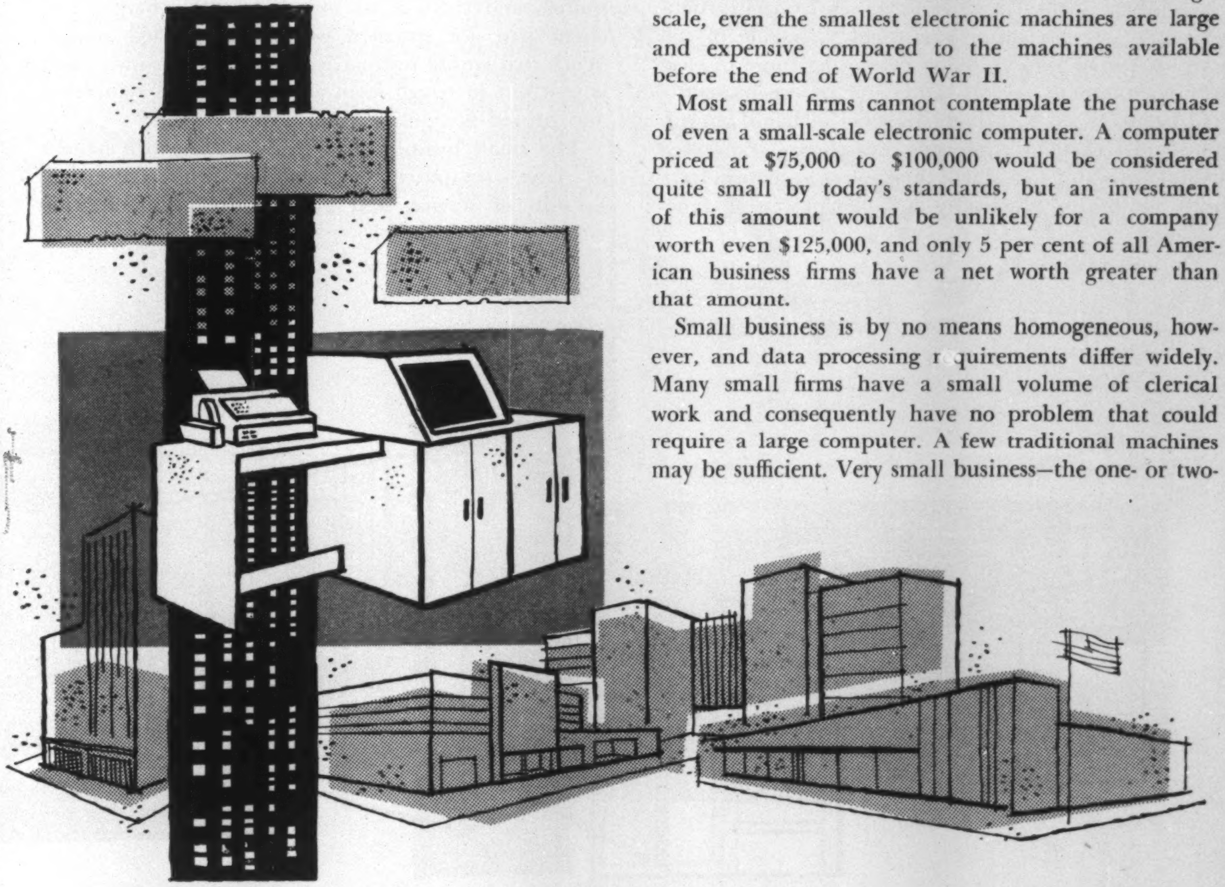
INDUSTRY'S TREND to the use of giant computers has blithely by-passed the small business man.

He is the forgotten man in the era of electronics—a patient, persistent, apprehensive, but hopeful observer from the sidelines. Yet, he runs 95 per cent of the more than three million business firms in this country. A potent force and an essential part of the nation's economy, he faces a type of competition with big business that both threatens his existence and challenges his ingenuity.

Business transactions, reports, and statistics are being processed in an ever-increasing volume by electronic computing and processing equipment. While not all of these new machines are classified as large-scale, even the smallest electronic machines are large and expensive compared to the machines available before the end of World War II.

Most small firms cannot contemplate the purchase of even a small-scale electronic computer. A computer priced at $75,000 to $100,000 would be considered quite small by today's standards, but an investment of this amount would be unlikely for a company worth even $125,000, and only 5 per cent of all American business firms have a net worth greater than that amount.

Small business is by no means homogeneous, however, and data processing requirements differ widely. Many small firms have a small volume of clerical work and consequently have no problem that could require a large computer. A few traditional machines may be sufficient. Very small business—the one- or two-



Only 5 per cent of all American business firms have a net worth large enough to justify small-scale computer.

Only progressive small businesses need electronic data processing

girl office variety—faces no urgency. It is the larger segment of small business that feels the pinch, and there are many thousands of firms in this group.

Of course, all the older methods of data processing are available to small business. Adding, calculating, and bookkeeping machines still perform the standard, time-tested tasks of recording and processing business transactions. Thousands of small firms, and many large ones, use these familiar machines as they have for decades. Their efficiency has not diminished, and improvements in recent models have increased their usefulness. These machines are reliable work horses, but in work output they have the same relationship to modern computers that work horses have to jet engines.

What, then, does the future of data processing hold for small business? If large computers are too costly, how can expenses in a small office be kept to a competitive level?

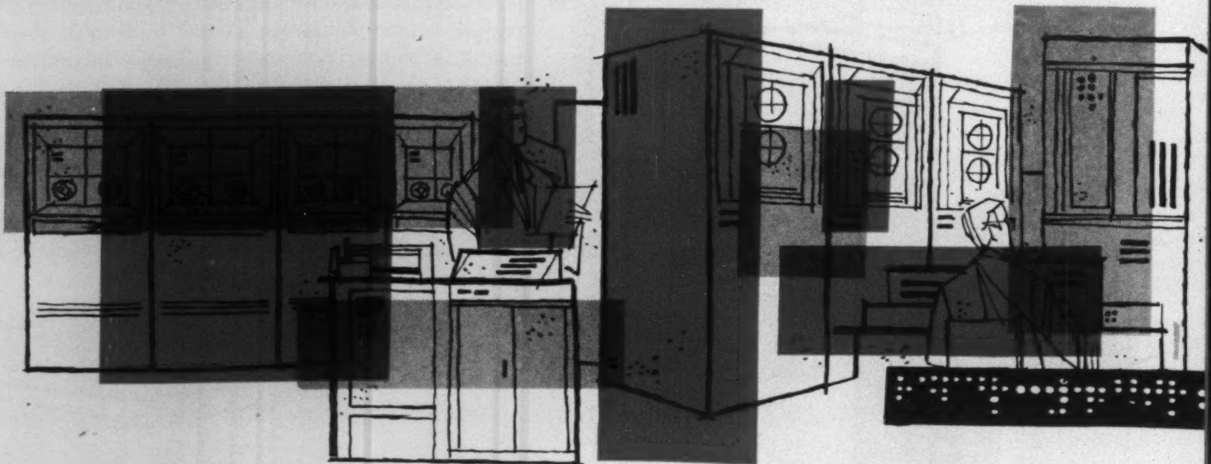
For these firms the advantages of electronic data processing are becoming increasingly available in the form of service centers. Long before the surge to electronic computers, service centers—or service bureaus—had begun to do a thriving business in handling volume tasks of data processing for clients. Equipped with tabulating machines, these service centers have been performing practically any data processing function the client might require. A considerable part of their volume has been overflow and emergency work for large firms, but an increasing amount of steady, routine work is for smaller firms.

These data processing service centers are constantly increasing in size and number throughout the country, and many are adding electronic computing equipment for volume processing. In addition to private contractors in this field, the major manufacturers of data processing equipment have established service centers at their larger sales locations. Thousands of business firms are now within range of one or more such centers.

Less investment, fewer employees needed

The significance of this growth of service centers is obvious. They provide a reservoir of high-speed data processing capacity, which is available to anyone on a fee-for-service basis. No capital investment is required, and there is no monthly rental charge. The client pays for specified work and specified results. Work that would ordinarily be done in his own office is sent out in rough form and returned in completed and proved accounting records and reports.

The small business man thus gets the full benefit of large computer programming with its speed, breadth of service, and assured accuracy. Offsetting



While calculating and bookkeeping machines are reliable work horses, in work output

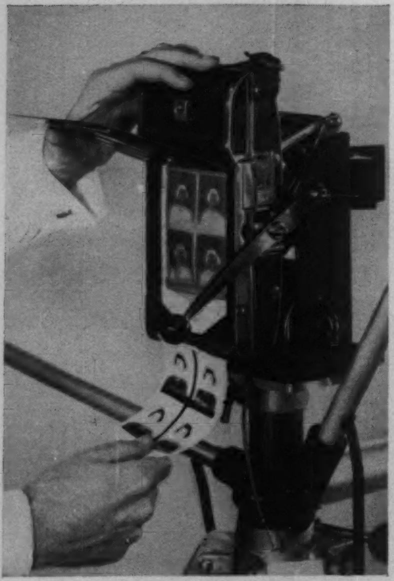
the fee he must pay is the fact that he needs less investment in equipment and fewer employees on his payroll. Many firms are finding this to be a great advantage. The small business man gets another advantage that may not have been available under his old method: the prompt return of management information, analyzed in significant detail with reliable accuracy.

Service centers offer a wide range of services. Some are equipped to take over practically the entire job of data processing for a client firm. In most instances, original documents and entries are completed in the client's office. The extent of service beyond this point is elastic and depends on relative costs and the client's needs.

As an example, copies of orders may be submitted to the service center for processing to obtain invoices, sales analyses by areas, commodities, price lines, adjustments to inventory, and listing of accounts receivable. The service center does this processing by punching cards from order or invoice copies. Since card punching is a relatively expensive service, the client may prefer to do the punching and submit cards to the processing bureau. A typewriter or bookkeeping machine hook-up with a card punch can produce by-product cards automatically during the original order or invoice writing.

The relatively new tape punching typewriter and the tape punching adding machine now bring the client company a still greater advantage. In the new technology of data processing, the most important single aspect is the ability to capture essential data with one writing, and then feed these captured data

they have the same relationship to modern computers that work horses have to jet engines.



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(Circle No. 11 on Reader Inquiry Card)

Tape punching machine is good investment

to machines that are able to read and process it automatically. The tape punching typewriter and adding machine do just that. As a record is typed, a paper tape is punched automatically with the identical information. This punched tape can be read by a variety of machines, including the typewriter that produced it. And in reading, the machine is operated automatically, as instructed by the tape.

To get maximum advantage from the modern electronic equipment now available in many service centers, a small company may find it expedient to invest in one or more of the new tape punching machines. These relatively simple and moderately priced machines open the door to full automation for small business. Repeated clerical handling of data is eliminated, and human errors are reduced to a minimum.

Furthermore, the tape eliminates expensive manual card punching. At the service bureau, the tape is fed into a tape-to-card converter, which automatically punches cards with the data in the tape. Some of the large computers are designed to read the tape, thus eliminating the need to punch cards. This inexpensively produced tape, a by-product of the original recording of data, becomes the means for complete automation at minimum cost.

Many types of firms benefit

Many types of business can benefit by using service centers for their data processing. Thousands of manufacturers come within this category. When a small manufacturer handles a large number of orders each day, compounded by a variety of product units, a sizable clerical job can result. In addition, factory records, inventories, purchasing, and payroll all add to office expense and investment in office equipment.

Wholesale firms are burdened with similar clerical problems. Inventory records in a wholesale operation can be a large figuring and recording job. Also, order processing, purchasing, and payroll may get into heavy volume—all of which can make service center facilities an extremely valuable aid.

Other types of business firms are beginning to discover the availability of service centers and the advantages they offer when data processing routines are organized with them in mind. Insurance agencies, contractors, banks, professional firms, libraries, public utilities, hospitals, schools and colleges, and many others make up this growing list. Each has special problems, but for each problem there is a solution to be found by way of the computers, sorters, and tabulators available at service centers.

Service centers are equipped to process sales orders, payroll, purchases, and inventory records, to name only a few applications. To illustrate a typical situation, a manufacturer or wholesaler may receive a large number of orders daily. Order processing, usually done in the company office, can be a burdensome task with unavoidable delays and inaccuracies. The series of steps required may include transcribing the customer's order to an internal order form, writing invoices, posting to accounts receivable, making adjustment entries to inventory records, proving all stages of the work, and preparing essential statements and reports.

A greatly simplified routine can be followed when a service center is available and a tape punching typewriter is used in the company office. In a typical operation where this is being done, incoming orders are checked and given to a typist who transcribes the customer's order — often handwritten — to the company's order form. As the order is typed, a by-product tape is punched automatically, capturing the information typed on the order.

The punched tape is filed until the shipping clerk returns his copy with notation of shipment. Then the tape is placed in the reading unit of the same typewriter to write the invoice automatically

This article is the first in a series on electronic data processing for small business. Future articles will cover service centers and small-scale data processing devices available to small business. Authors will include EDP users, computer experts, and members of the OFFICE MANAGEMENT and AMERICAN BUSINESS staff.

from the data punched with the order writing. New or variable data may be entered from the keyboard as invoices are written, and a new composite tape is automatically punched with the data entered on all invoices.

Edge-punched cards used

Another great advantage of the tape punching typewriter is the fact that even the original typing of the order is largely automatic. Edge-punched master cards are used instead of punched tape for repeated writing of established information. These cards are easily filed, and quickly found, for orders to be written.

Files of edge-punched cards are maintained for both customers and products. An edge-punched master card automatically writes the customer's name, address, shipping instructions, terms, and other data. Edge-punched product cards automatically enter product descriptions. These wonderful data cards minimize manual typing, make entries at maximum speed, and practically eliminate errors of entry.

After the invoice writing is completed, the tape is forwarded to a service center where all remaining processing is done by using the data captured on the tape. At the service center, tabulating cards are punched automatically by a tape-to-card converter which transfers the tape data into punched cards. From the cards, sales analyses are made by products, by salesmen, and by types of customers. Accounts receivable are listed and adjusting entries to inventories are tabulated.

Not only are day-to-day activities completed with automatic speed and accuracy, but the service center makes prompt month-end and year-end summaries, which are invalu-

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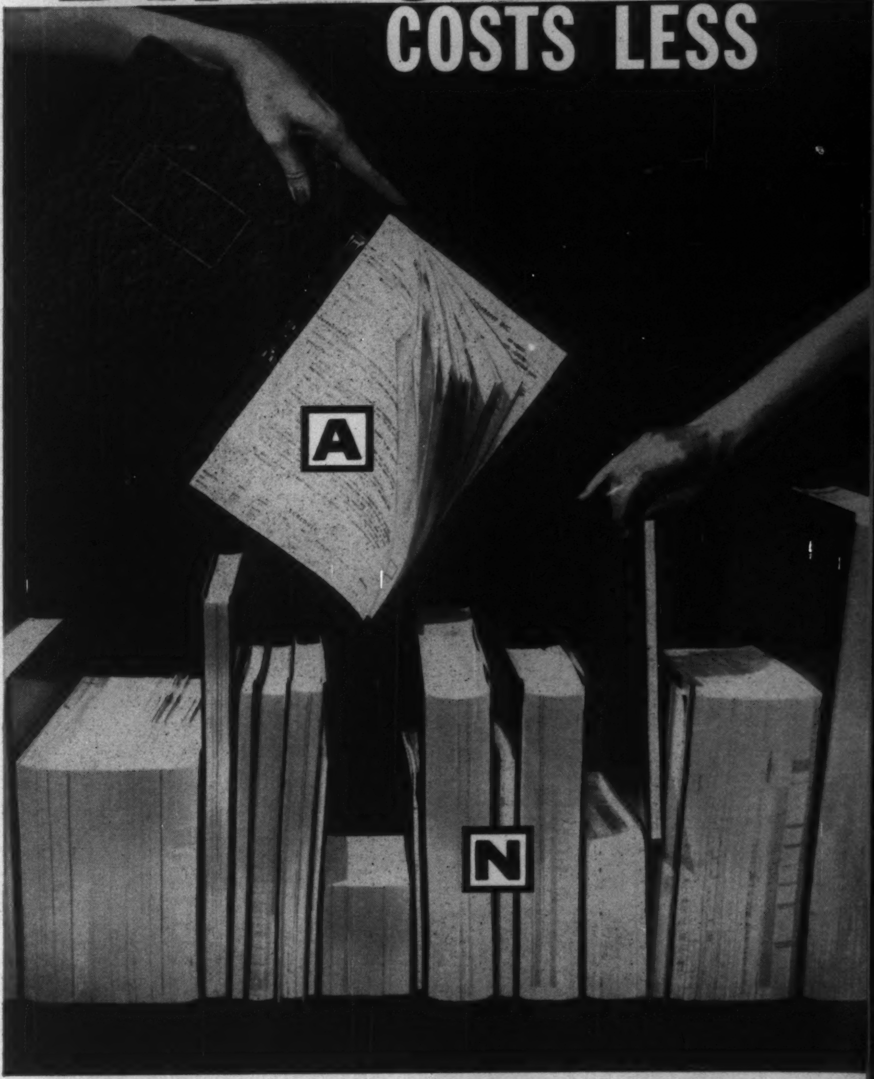

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(Circle No. 12 on Reader Inquiry Card)

Beware of alert competitor who uses electronic data processing

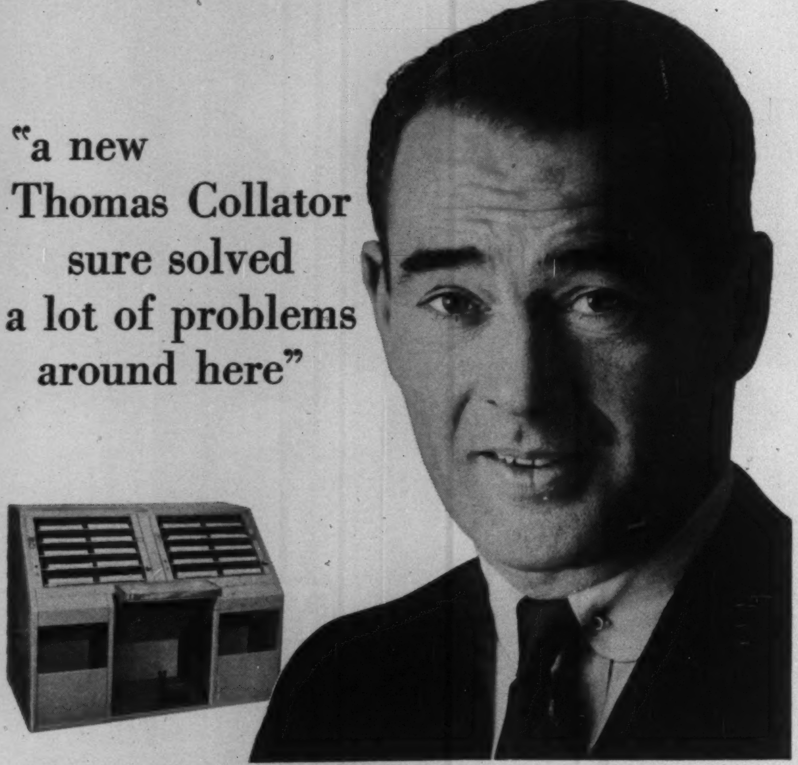
able for proper management of small business as well as large.

Why should a small business firm consider the use of a service center when it has an established system that has served its needs for years? The answer is that the company should at least consider it to be sure it is not overlooking something that needs attention. There is always the possibility that a new idea, if not adopted, may put the alert competitor who does adopt it, in a superior position.

A service bureau may provide advantages not dreamed of, although it will not benefit every small business, and may be an expensive luxury to some. For many firms, however, impressive gains and savings can be made. Both payroll and the investment in office equipment can be decreased. The greater extent and quality of data processing, made possible through a service center, can be worth many times its cost.

High-speed processing, furthermore, keeps records and management summaries up-to-date. An almost infinite variety of analyses are possible to meet management needs and to provide information that may never have been available through manual routines. Promptly processed sales analyses point out both strong and weak areas in time for profitable management attention. Cost distributions of labor, material, and overhead are simple routine for a computer, although a time consuming task for a clerk, and machine results are amazingly accurate.

While it is true that the swing to electronic computers did at first by-pass the small business man, it is now apparent that he has been re-discovered. He, in turn, is discovering modern data processing by way of service centers. This will put many small operators back into more effective competition with their bigger rivals, and thus preserve a vital segment of American business.


"a new Thomas Collator sure solved a lot of problems around here"

It's my job to look for trouble—preferably before it starts—but one job that always caused me plenty of headaches was this business of gathering duplicated pages into sets. It's always the same—too little time—not enough help—and plenty of grumbling by the girls.

It wasn't until I had talked to the Thomas people that I realized our present method was as obsolete as the roll top desk. With our new Thomas Collator *one girl does the work of six* . . . without the mad scramble of last minute deadlines. What's more, the way it looks, the machine will pay for itself by the end of the year.

Why not call the Thomas people for more information or an actual working demonstration? If you're like us, you'll be glad you did!

Thomas Collators Inc.
100 Church St., Dept. E, N. Y., N. Y.

(Circle No. 13 on Reader Inquiry Card)

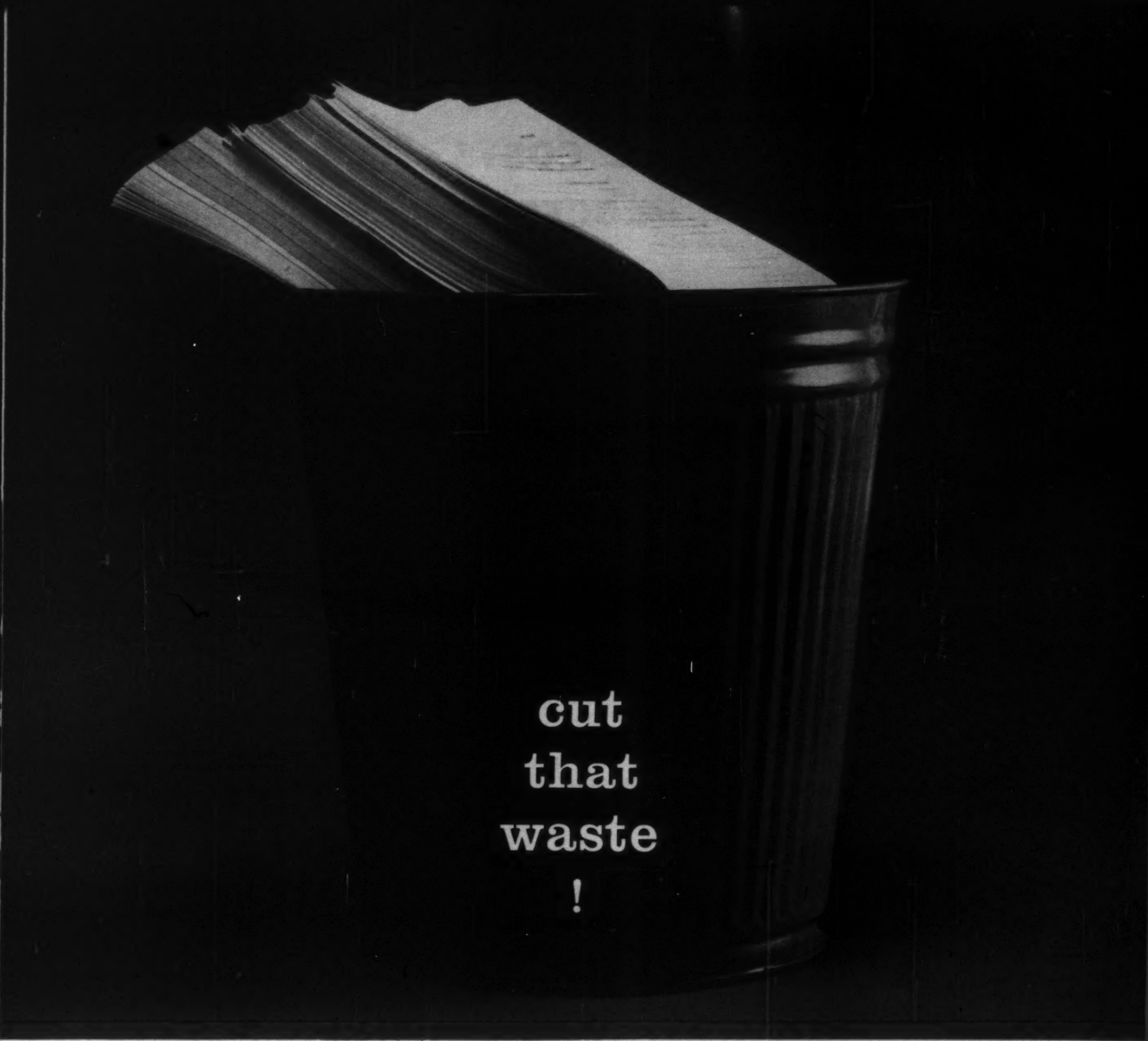
Computer provides results of Olympic Games in Rome

While athletes made the headlines at the Rome Olympic Games, electronic data processing worked behind the scenes to provide up-to-the-minute results to spectators and members of the press.

Located at No. 1 Via Veneto, just behind Rome's famed Fountain of the Bees, was an IBM RAMAC 305 data processing system. For 16 hours a day this system generated statistics of the games as well as summaries of each day's competition.

Stored in the computer's memory device were millions of facts on all participants, their past performances, results of previous Olympic games, and all past international records.

Information was available in the three official languages of the Games of the XVII Olympiad – English, French, and Italian.



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*T.M.

(Circle No. 14 on Reader Inquiry Card)

CUTTING CLERICAL COSTS IN THE ORDER PROCESSING DEPARTMENT

Business can no longer tolerate "bottlenecks" in any department

By RICHARD D. SIMMONS
Office Manager
Amphenol Connector Division
Amphenol-Borg Electronics Corp.
Cicero, Ill.

MANAGEMENT TODAY is faced with a serious problem in trying to find ways to reduce operating expenses. The marked increases in material cost and wages have caused most companies to feel a need for the study and re-evaluation of their operations.

The day of overlooking or accepting "bottlenecks" as inevitable is passing. If a company intends to maintain a healthy profit and still be competitive, it is necessary to cut costs somewhere. One possible area of cost cutting is the order processing department.

The basic function of the order processing department at Amphenol Connector Division is to transcribe all pertinent information from the customer order onto our 15-part order-invoice set. This order set is then distributed to the production control, production, shipping, sales, and IBM tabulating departments. An invoice set (to be billed at time of shipment), as well as the customer's acknowledgment, is also created.

With 28 persons processing a daily average of 400 customer orders, 600 billings, 145 back orders, 50 credit memorandums, and 60 change orders, it was felt that something should be done to speed the handling of all this paper work. The customer order, being the most important single document in our organization, should not take from three to five days to process through one department.

A 15-part form is a rather bulky item to try to mechanize, but we definitely needed all 15 parts. We investigated other possibilities of getting these copies through various duplicating systems and found that the cost of pre-printed paper for these systems exceeds our order processing cost of $1.12 (15 parts at seven and one-half cents each).

Pre-printed forms do not do away with initial typing operations and distribution. In addition, there is the duplicating operation. But our 15-part set is ready for distribution when the typing is completed. These copies are distributed as follows.

Copies 1, 2, 13, 14, 15 — billing set to be completed at time of shipment and distributed to the customer (1, 14, 15), the statistical department for accounts receivable (2), and the field salesman as his commission copy (13).

Copy 3 — statistical department copy of order used to make reports on dollar volume orders received, customer requirements, and past due and future commitments.

Copies 4, 5, 6, 7 — shipping sets: permanent record of transaction (4), packing slip and label combination (5), sales department notice of shipment (6), and customer notification of shipment (7).

Copies 8, 9 — production control copies: follows material through production line to shipping and allows shipping to pull shipping order from file (8), hold in production control for inventory records and purchasing of material.

Copy 10 — customer's acknowledgment, which shows shipping date and terms of order, is mailed to customer on the day order is typed.

Copy 11 — sales department holds copy of order for expediting purposes until copy 6 is received.

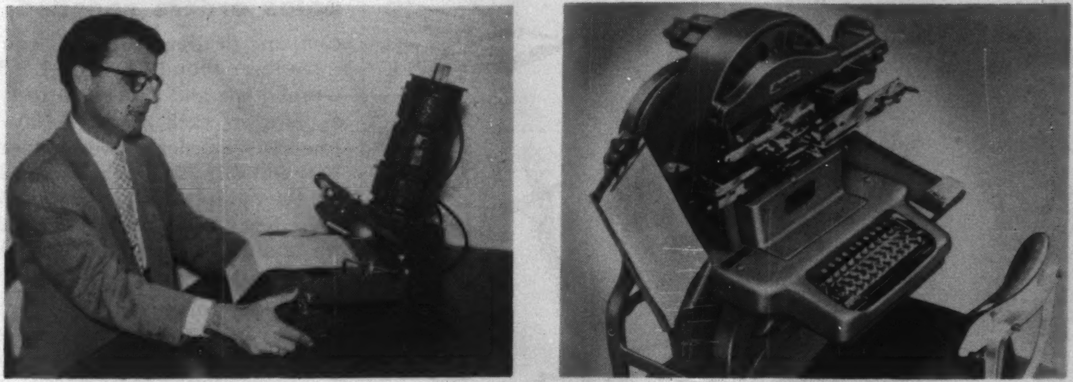
Copy 12 — field sales copy of order is used to notify sales office that order has been received and accepted by home office. It also shows shipping date of material.

Of a possible 4,000 customers we found 150 of them gave us 50 per cent of our daily volume of 400 orders. We also found that such information as the billing address, our field salesman, and all internal account numbers used by our statistical department is constant for each customer. A large percentage of the forms wasted were due to a typing error in transcribing this basic information. (It is not practical to erase 15 parts), and this constant information represented approximately one-third of the total typing on the average order. The clerk responsible for writing the "coding" on the customer order took more time than did anyone else processing the orders.

Typist doubled day's output

Thus, a possible solution to the problem of order processing costs was indicated: Find a way to provide all constant information with a minimum of errors and no additional personnel.

The use of addressograph plates seemed to be a natural for this. But, how could we get an addressograph plate to cut through 15 copies and the carbons? The answer was a form made in two parts, a 7-part and an 8-part, which are later stapled together with an electric stapling



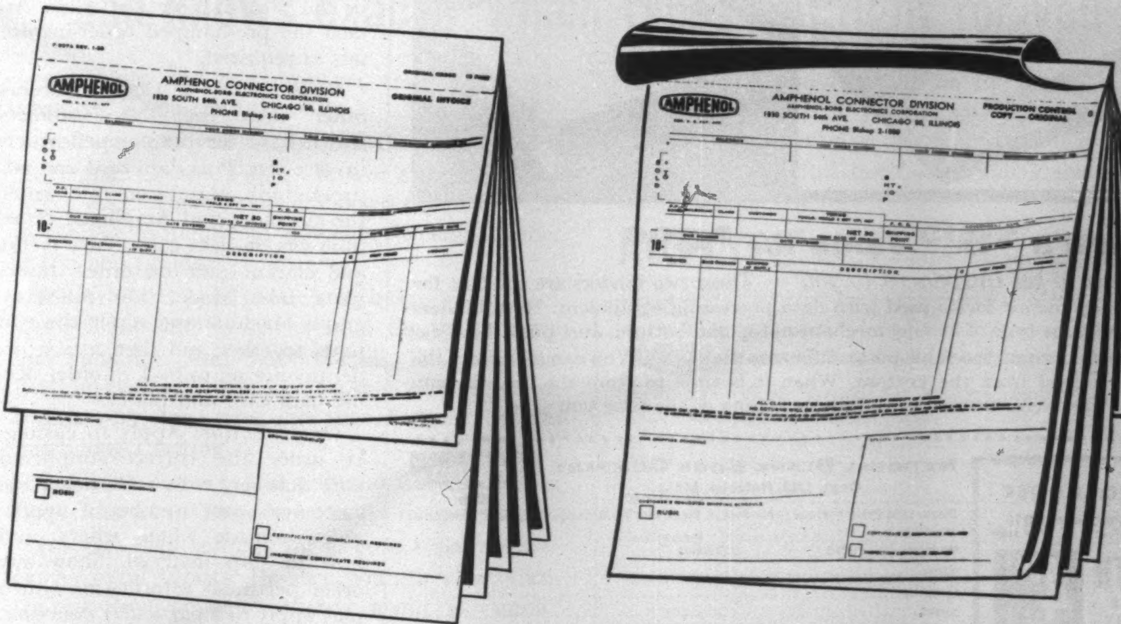
The author demonstrates "mechanized" addressing machine (left); plate is used on a Model 6340 Graphotype.

machine. We designed our order-invoice set so that the desired information could be typed on the addressograph plate number VV27-2-210 to be used on the Model 150 Addressograph Machine. With this plate, we were able to use a Model 6340 Graphotype with #35 type and have ample room to show our salesman name, four lines for customer billing address, and one line for all necessary data required by the statistical department. One copy of our order set is utilized as a packing list label combination so the larger type as provided by the graphotype was most desirable.

To test the new procedure, we cut 50 sample plates. Fifty customers were carefully selected so as to give us the maximum of orders daily. It was first estimated that those customers would give us a volume of 50 orders daily, satisfactory for a trial run. Actually, they provided us with about 100 orders daily.

At a nominal price, based on future quantities, our forms vendor made a short run of 5,000 forms for this trial run. The experiment was a huge success. The typist selected for this experiment doubled her day's production. Her material waste dropped from 22 to 7 per cent. Her morale was lifted as her job was made easier, and she was able to produce more. This was enough to convince us to go ahead. We could visualize not only a more expedient way of handling the orders but were now dreaming of cutting the staff by two people, a savings of $6,000 annually.

Through an office equipment



AMPHENOL

AMPHENOL CONNECTOR DIVISION

CHICAGO 50, ILLINOIS

ORIGINAL INVOICE

Since a 15-part form is too bulky for Addressograph plates, Amphenol divided its sales orders into 7-part and 8-part forms.

company dealing with used equipment we found a Model 6340 Graphotype and proceeded to type a plate for each of our 4,000 customers. We ordered two R-21 cabinets and one additional Model 150 Addressograph Machine. We placed our order with our vendor for a nine-month supply of order-invoice sets.

While waiting for our supplies to arrive, we purchased several metal sorters to provide us with two-inch pigeon holes to file the pre-stamped order-invoice sets for those 150 active customers. This we felt, would save time in the "coding" operation.

How order department works

Here is a brief outline of how our order department processes a customer's original order:

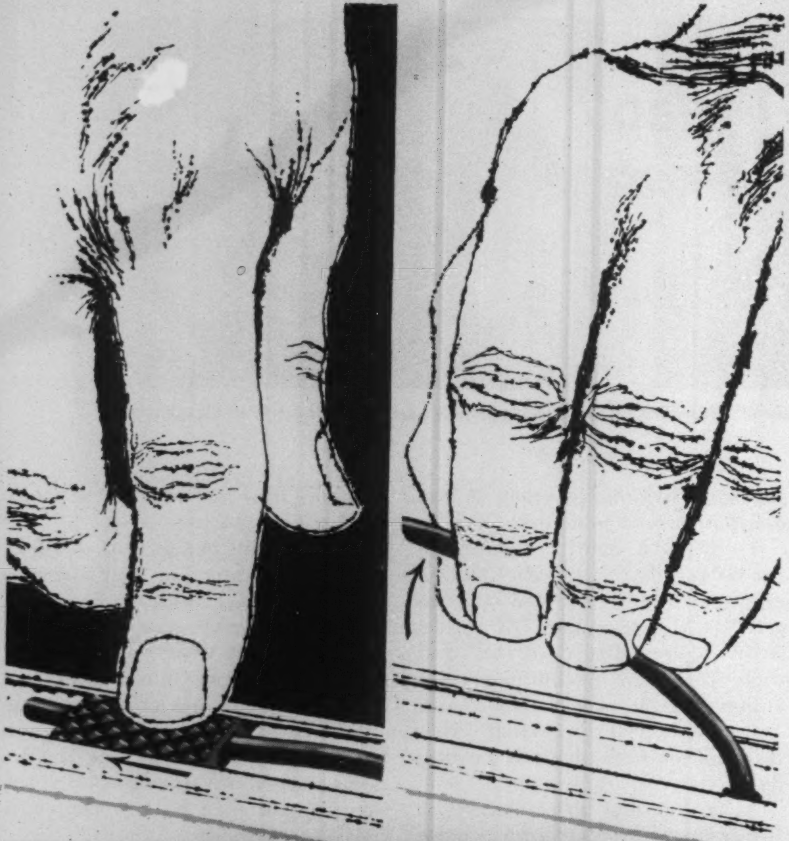
Clerk 1: Sort all orders, pulling out the confirming and change orders. Underline customer order number, circle in red the government contract number if one exists. Scrutinize orders for terms not acceptable to company policy. Apply the Amphenol order-invoice number directly to the customer order.

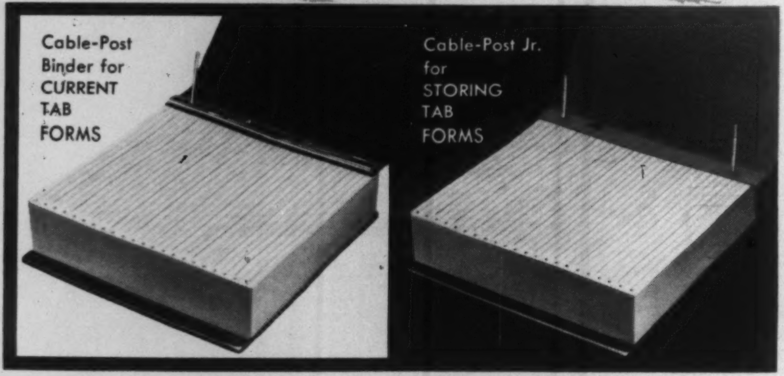
Coding Clerk 1: Enter customer and Amphenol order number to the customer data card. Show credit and class-of-trade on order. Attach the pre-stamped order-invoice sets as required.

Coding Clerk 2: Code all orders other than the 150 customers which have the pre-stamped order-invoice sets. Pull data card and addressograph plate from file, enter the customer and Amphenol order numbers on data card. Show credit and class-of-trade on order. Insert plate into Model 150 Addressograph Machine and staple the two parts together and then attach order-invoice set to back of order. Refile data card and plate.

Order Editor: Apply to customer order the correct Amphenol part number, cross referencing the customer's part number if applicable. Indicate when, where, and how to ship material. Show any other pertinent information which may apply to a particular customer.

Order Pricer: Price all items on

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My office supply dealer is ....
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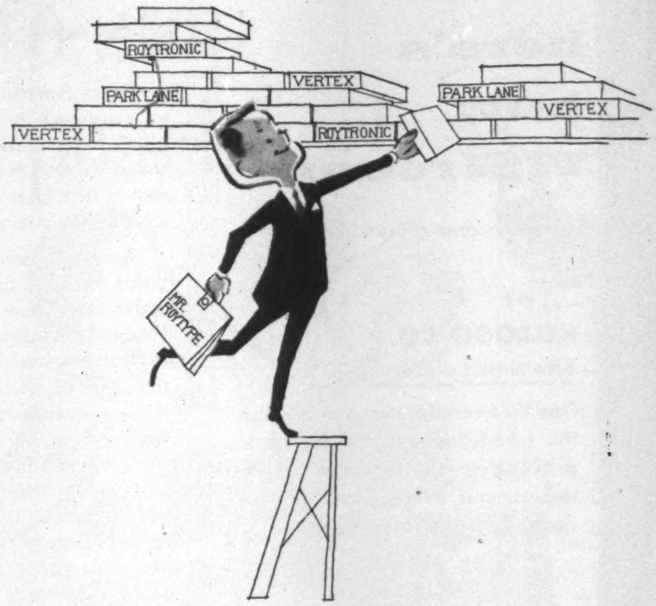
NBO-23

(Circle No. 15 on Reader Inquiry Card)



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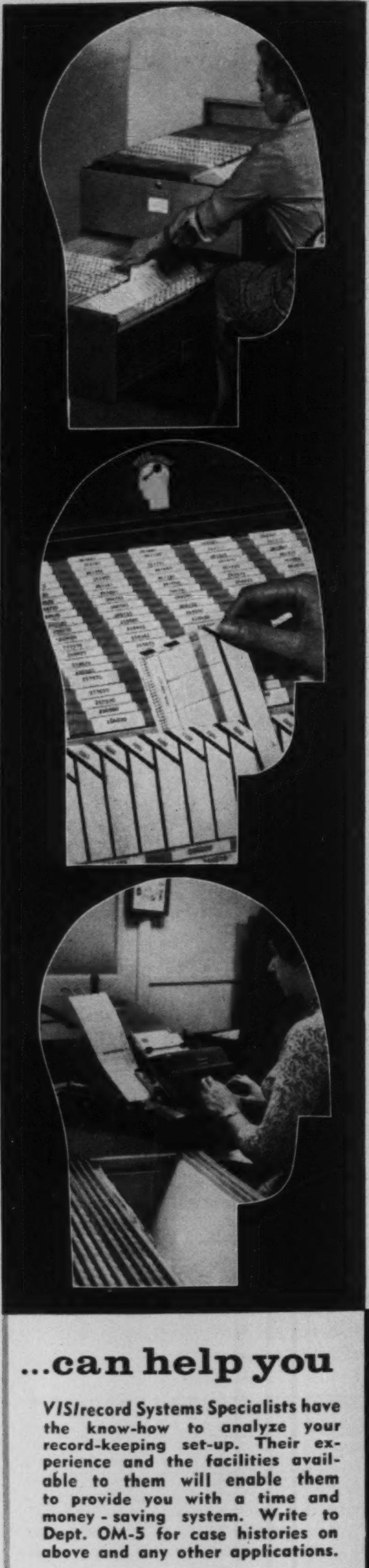

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accelerated processing 33%...

One VISIrecord system now handles the scheduling and controlling of preventive maintenance for 96 departments. Processing of requisitions was accelerated at least 33%.

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The VISIrecord furniture unit control system also helped increase turnover from 2.8 to 3.5, reduced merchandise return by 10% and cut delivery time.

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Built around VISIrecord edge-punched cards, and the famous Friden Flexowriter, the almost totally automated purchase order system at Friden's Rochester, N.Y. plant keeps materials flowing to every production area.

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VISIrecord Systems Specialists have the know-how to analyze your record-keeping set-up. Their experience and the facilities available to them will enable them to provide you with a time and money-saving system. Write to Dept. OM-5 for case histories on above and any other applications.

VISIrecord, Inc.
375 PARK AVENUE, NEW YORK 22, NEW YORK
SYSTEMS SPECIALISTS IN PRINCIPAL CITIES

(Circle No. 17 on Reader Inquiry Card)

Processing costs cut

order based on quantities purchased.

Order Scheduler: Check customer-requested delivery date. Further check the availability list for the items shown. Schedule customer order as nearly as possible to the date which the customer has requested.

Order Typist: Remove order-invoice set from back of the customer order and insert into typewriter. Proceed to type all pertinent information shown on the customer order. All of the following must be shown: customer order number, inspection or certification requested by the customer, class-of-trade applicable to this sale, Amphenol order number, quantity, Amphenol and customer part numbers, and the unit price. In the appropriate place show such information as customer-requested delivery, Amphenol-promised delivery, and any other special instructions applicable to the customer order.

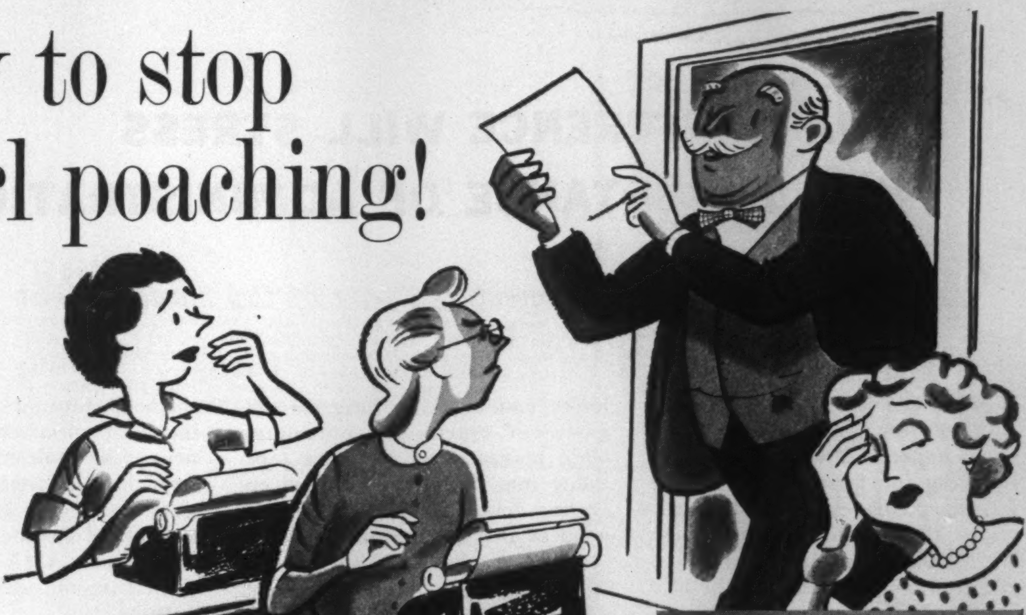
Clerk 2: Distribute all copies of the order-invoice set to the proper departments. File invoice set in open billing file.

$2,000 spent on program

The total cost of our new "mechanization" program was slightly less than $2,000. This includes the price of two automatic attachments to the Model 150 Addressograph machine.

What did we gain by this "mechanization" and expenditure? Today, all orders that need no clarification from the sales department are processed through the order department within an eight-hour working day, compared to three to five days before. Virtually all information provided for the benefit of the statistical department is correct. We figure a savings in excess of $1,000 annually in forms. All of this was accomplished with a 40 per cent decrease in personnel: The order department staff was reduced from 28 to 17 persons. We were surprised to find such a savings could be found in one small "overhead" department of our organization. Have you taken a good picture of your order processing department recently?

How to stop girl poaching!



"Our Pres. is one of those direct action, do-it-now guys. Whenever he wanted to send out dividend checks, dealer bulletins or copies of his own speeches, he just commandeered all the girls in the shop, and put them on his chain gang. The girls hated it – and our daily work schedules went haywire.

"Then our office manager learned about Pitney-Bowes' little folder and inserter – and the Big Boy gave up girl poaching. One girl now handles all the mailings. No crises, no sweat!"

A compact, combined folding and inserting machine, the 3300-FH can fold and stuff 500 single enclosures into envelopes in eight minutes.

It will handle statements, invoices, booklets, price lists, coupons, even stapled sheets.

The 3300-FH is a cinch to set and easy to use; folds and stuffs more accurately than hand operations; feeds and stacks automatically; helps avoid diversion of girls from their regular jobs and the interruption of office schedules; saves time, overtime, and hiring temporary workers. Both the folding machine and the inserter can be used separately.

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FREE: *Handy desk or wall chart of postal rates, with parcel post map and zone finder.*

The 3100 Inserter is a larger, high capacity model, that will stuff up to six enclosures, at speeds as high as 6,000 per hour. It can also be attached to a Pitney-Bowes postage meter mailing machine that meter stamps and seals envelopes after stuffing.

Pitney-Bowes

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(Circle No. 18 on Reader Inquiry Card)

AMA CONFERENCE WILL STRESS NEW IMPORTANCE OF ADMINISTRATION

"Administrator" now considered part of top management

A NEW CONCEPT of the administrative function, which gives it equal importance with sales, manufacturing, or finance, will be the central theme explored by speakers at the American Management Association's Special Administrative Services Conference, to be held in New York October 17-19.

The conference is sponsored by the Administrative Services Division of American Management Association, which formerly was called the Office Management Division. The change in division title, announced in June of this year, was attributed to the growing scope and importance of the administrative function — the same trend which will be explored at this month's conference.

According to AMA, top management is "now giving the administrative function the same emphasis, respect, skills and support as is usually given to marketing, manufacturing, research and development, and finance." Speakers at the conference will explore the reasons for this change in attitude, and the forces tending to "integrate objectives of systems and procedures, office management and data processing into a tightly controlled operating force, functioning for the good of the company as a whole."

VICE PRESIDENT

Growing scope of administrative function has led to increased prestige for the office administrator.

The first talk on the opening day of the conference, Monday, October 17, will deal with "Administration in Perspective," and the speaker will be Sumner G. Whittier, Administrator of Veterans Affairs, Veterans Administration. Mr. Whittier will discuss the reorganization of the Veterans Administration which has occurred in the past several years, and the reasons for his belief that centralized control of office and administrative planning is desirable, even though company operations may be conducted on a decentralized basis. The concept of an assistant administrator concerned solely with office functions — data processing, office methods, services, data communications, building administration, office services, major records and accounting, and methods engineering will also be outlined. The V.A. management control system which is employed to give a precise picture of administrative expenses will be covered as well.

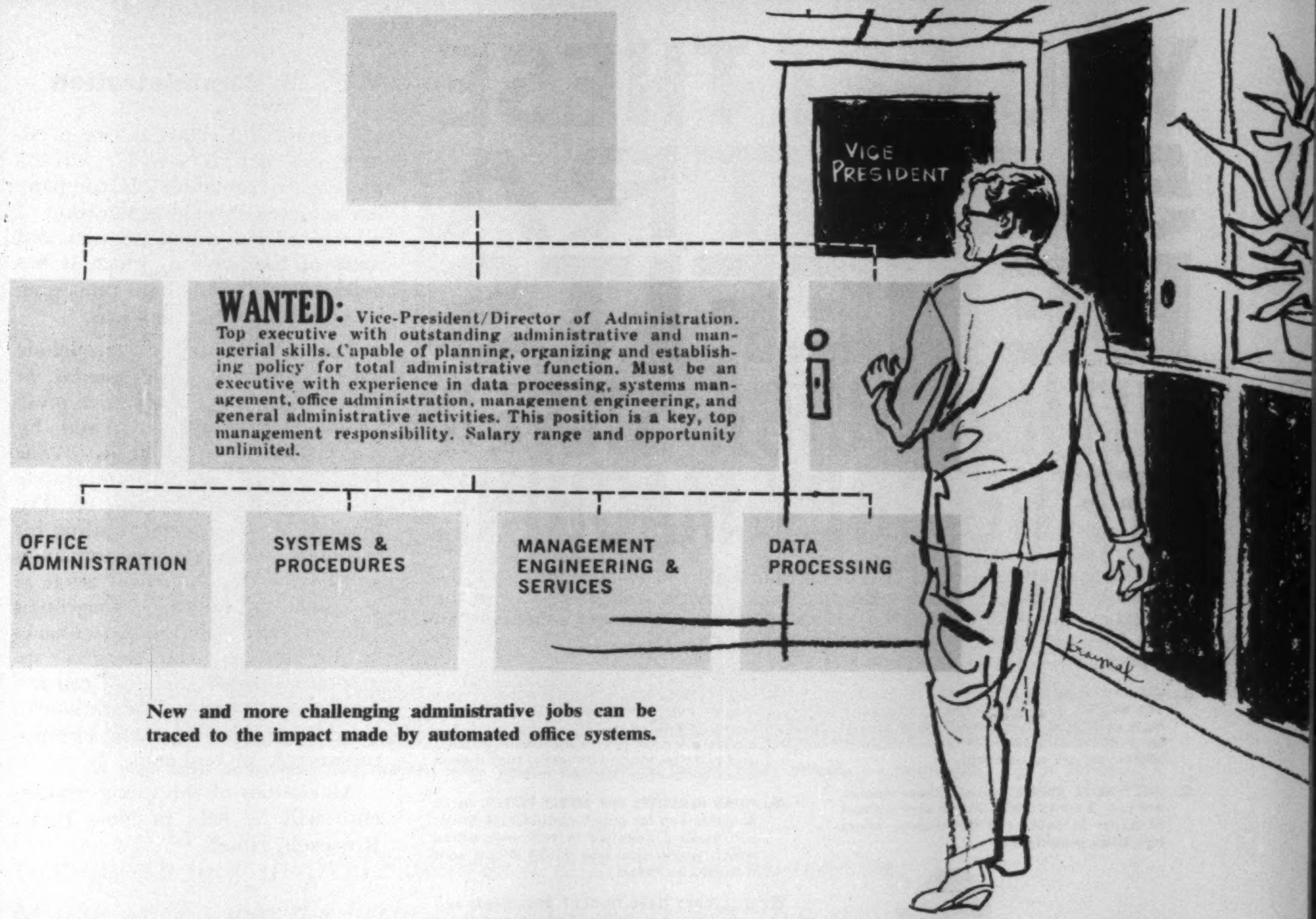
Second talk at the opening session will be "Setting the Climate and Framework for the Development of Office Administration, Data Processing, and Systems for an Integrated Top Management Function." The speaker, Stevens S. Shea, vice president, data processing, American Life Insurance Company, Newark, N. J., will discuss the development of proper working relationships between the administrative function as a top-level, policy-making activity, and other top management areas. Mr. Shea will also discuss how such meshing of administration with other top management functions can "produce increased effectiveness of the business as a whole as well as major reductions in overhead."

An open "get together" luncheon, a standard feature at meetings of the former AMA Office Management Division, will be held on the opening day.

First Monday afternoon speaker will be L. Griffith, assistant controller, International Latex Corp., Dover, Del. His topic will be "An Outline of Organization for the Vice President-Director of Administration — His Responsibilities, Objectives, and Contributions as a Top Management Official." Tracing the growing acceptance of a new management position — the Vice President for Administration — to the growing complexity of the office functions, and the dependence of many divisions of the company on the data processing facilities housed in the office, Griffith will outline an approach to complete systemization of paperwork operations and administrative organization.

"Buzz" sessions scheduled

Concluding the first day program will be a case study in the application of the administrative management concept, conducted by Marshall K. Evans, vice president, Management Service, Westinghouse Electric Corp., Pittsburgh, and S. J. Merriman, assistant general manager of the same company's East Pittsburgh Division. (Westinghouse is one of the major companies that have given administrative management top status.) Mr. Evans will describe the company's program for improvement of administrative activities on both a centralized and decentralized basis. Mr. Merriman, who is an operating manager in one



WANTED: Vice-President/Director of Administration. Top executive with outstanding administrative and managerial skills. Capable of planning, organizing and establishing policy for total administrative function. Must be an executive with experience in data processing, systems management, office administration, management engineering, and general administrative activities. This position is a key, top management responsibility. Salary range and opportunity unlimited.

New and more challenging administrative jobs can be traced to the impact made by automated office systems.

of the company's divisions, will outline the way in which the program works at the division level.

The first speaker on Tuesday will be R. Howe, Director of Administration, Data Processing Division, IBM, White Plains, N. Y. Mr. Howe will outline the IBM concept of the administration function – the "development of an organization that could design, set up and operate a management information system to furnish all company activities with complete, accurate, and up-to-date data for decision-making." Following through on this concept, IBM has grouped all the essential elements of administration into one department, with varying responsibilities grouped into a single operational unit. Mr. Howe will discuss both the advantages and disadvantages of this type of organization, and describe how it can be made to work successfully. He will also outline the advantages of such a centralized system in providing the information needed for performance measurement and control, as well as for planning and operating the company.

The balance of the morning session on Tuesday will be devoted to a panel discussion on the topic of "Organizing and Managing Data Processing, Systems and Procedures, Office Administration and Management Engineering Functions in an Administrative Policy-Making Unit." Panel members are:

Leslie Matthies, director, Foundation for Administrative Research, Tulsa, Okla., who will talk on the place of systems and procedures in administrative management.

Robert Shull, manager, Administrative Standards, American Cyanamid Co., New York, who will discuss the role of management research in administrative management.

J. B. Foote, manager, Computer Center, Union Carbide Corp., New York, who will outline the relationship of data processing to administrative management.

Panel moderator will be Budd Sills, vice president, Speigel, Inc., Chicago.

H. J. Wallis, assistant vice president, General Staff, Bell Telephone Laboratories, Murray Hill, N. J., will open the Tuesday afternoon session. Mr. Wallis will discuss in detail the Bell Laboratory experience in organizing administrative functions as a top level policy making activity, and outline the savings that can be achieved through unifying all administrative functions.

The latter part of Tuesday afternoon will be devoted to small "buzz sessions" in which conference registrants will form functional groups to exchange ideas on how their companies can begin to prepare for the rapid changes in the scope of the administrative function.

The conclusions and ideas resulting from Tuesday afternoon's buzz sessions will be reported by a panel of speakers on Wednesday morning, so all attending the conference can benefit from their colleagues' viewpoints.

Final program speaker will be George Whitlock, treasurer, Sperry Gyroscope Co., Great Neck, N. Y., who will explain why his company

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OM-10

(Circle No. 19 on Reader Inquiry Card)

V.P. of administration

has created the office of vice president of administration. He will explore the economies his company has achieved through unification of all data manipulation facilities, and some of the ways in which it has extended electronic data processing to non-accounting functions.

The conference will conclude with a luncheon on Wednesday, at which George W. Crane, vice president for Administration and Finance, RCA, will discuss "Your Future Role in Administrative Management — Tragedy or Triumph." Mr. Crane will outline his reasons for believing that companies which still treat administration as a minor or middle management function may face serious set-backs in the future, and suggest approaches which individuals can follow to induce their organizations to review and reevaluate the administrative role in business.

All sessions of the special conference will be held in New York's Roosevelt Hotel.

Computer will name winner of Presidential election

On election eve, an electronic computer will project the winner of the Presidential race, the electoral vote split, the total popular vote, and the popular vote split. These projections will be made by an RCA 501 throughout the night as each new batch of returns comes in and is fed into the computer.

C-E-I-R, Inc., which will use the computer to process the 1960 Presidential election returns for the National Broadcasting Company, predicted that the projections will be the fastest and most accurate ever made.

Within 38 seconds after receipt of the election returns in the form of hard teletype copy at NBC headquarters in Rockefeller Center, they will be processed by the RCA 501 at the Electronics Service Center on Wall Street. The projections will then be relayed to NBC for broadcast on its nation-wide radio and television networks.

A page must understand and quickly obey the instructions of many bank officers — preparation for a future.

Occupying new quarters creates a climate for innovation; at one of the world's largest banks a move resulted in

A TRAINING GROUND FOR SECRETARIES

By JOHN M. SINE

FROM 55 WALL STREET, in the depths of the nation's financial center, The First National City Bank of New York will shift part of its operations to an uptown headquarters at shining 399 on suave Park Avenue.

For months management strategists have patiently examined the smallest details in preparation for the move; planners in untold number – official and unofficial – have looked forward to greeting 1961 on Park Avenue. Such continuous planning is not only an assurance that the move will be a smooth one, but also produces new ideas—ideas that need trial, completion, activity, and motion.

One such idea, born from current plans at The First National City Bank, may have future applications in the selection and training of top-grade clerical personnel. It is the story of how one of the nation's three largest banking institutions ($8 billion assets at the beginning of this year) developed a training ground for secretaries. The story deals with the mustering of 31 bright, energetic young women on the banking floor to the delight of the 70 senior vice presidents, vice presidents, assistant vice presidents, and assistant cashiers, who inhabit that area.

But this selection and training program received its impetus from a seemingly unrelated idea – one that would help beautify the bank's uptown headquarters—in the form of a suggestion by a senior management executive to replace the bank's eight "information men" with the same number of female receptionists. Information men, as the name implies, were situated to

Today, this page delivers mail and messages; next year she may be his secretary.

Receptionist plays vital role in system

A receptionist dispatches the pages, co-ordinates their activity; aside from receiving bank customers, she must function as the center of division communications.

Pages relax in an alcove until summoned to service by a blinking light. These young women, arrested temporarily for a photograph, were not often found sitting.

Miss Anne Troneck, elaborating on a suggestion by a bank official, turned a remote idea into a very profitable reality.

provide information and direction to customers visiting the bank's Metropolitan, National, and Overseas divisions. Women placed at these positions would be a charming asset, the executive reasoned, since first contact with the customer is made at these desks.

Receptionists for the Overseas division would have to speak at least two languages fluently, since customers visiting that branch often did not speak English. The receptionist stationed in any division would have to be a mature woman with considerable ability. Receiving the public would be only one of her many activities. For the division in which she worked she would answer unattended telephones through a central call board, direct the pick-up and delivery of mail, perform a constant variety of tasks requested by bank officers (There could be as many as 50 officers requiring her services.), and co-ordinate and instruct a group of female pages.

Page girls were stationed within each division to perform errands and transport messages. They were chosen from several age groups and without a particular desire for uniformity. The rate of turnover among the group was high, and there was a strictly routine level of performance.

How could the page corps be revitalized? To what standards could the pages be asked to conform? How could they be better co-ordinated with the receptionists? These were a few of the questions confronting Miss Anne Troneck, official assistant for operations in the personnel division, whose job it was to bring the suggestion of replacing "information men" from idea to actuality.

"There was no apparent method of dealing with the problem without devising an entirely new system," Miss Troneck explained, "We had made various innovations, juggled components of the system from time to time, but the problems always returned. I wanted very much to hire bright young high school graduates as pages, but such excellent raw material is absorbed very quickly into other areas of the bank needing high-caliber trainees." It became obvious that any accomplishment would have to be made through other methods and with new ideas.

Following a period of extensive interviewing, receptionists with the qualities desired were hired for the program. The duties of the new receptionists could be expanded in many directions to suit the growing capabilities of the individual, although it was felt that the job offered enough challenge as it existed. The problem of finding girls for the page corps was not as easily resolved.

Hiring and training high school pre-graduates has been a practice at The First National City Bank for a number of years. Each February the bank hires students on an after-school, part-time schedule on the premise that they will become full-time employees of the bank upon graduation in June. After several months of part-time training, the new employees are ready to assume regular duties or more extensive training. The quality of employees wanted for the new page corps could be obtained through this existing junior program, but what would keep them? Although salaries for the pages could be raised above the ordinary starting level (within reasonable limits) the pay would not be high enough to provide the only incentive. The job itself, although demanding enough of the girls to keep them occupied, would not promote their development into mature, wage earning individuals.

Skilled secretaries are scarce

"Indeed, if the page corps was to become a real asset to the bank," said Miss Troneck, "I knew it would have to become a training ground—a jumping off spot toward a more essential and profitable position within the bank." Although the pages might be trained for a number of jobs within the organization, the position of secretary seemed more likely to attract the type of persons wanted. Skilled secretaries are also difficult to find, and especially difficult in the New York area. By training their own, the bank would have a steady supply of eager, competent young women. A knowledge of the bank's internal mechanism absorbed by the pages would be invaluable to any bank employee, and especially advantageous to secretaries.

Thorough, consolidated training of the many skills required of the secretary had not previously been undertaken by the bank. To help establish the type of training that would be required, Miss Troneck consulted the Katharine Gibbs School for secretaries. The school agreed to help develop and to administer a training program tailored to the requirements of The First National City Bank. A course of study was devised to teach the girls poise, ethics, grooming, and deportment in addition to the skills of typing, stenography, and other clerical duties. Three principles emerged to help define the course and future of the page corps.

1. Pages would be recruited from the best talent available;

2. They would be hired at a salary approximately five dollars higher than ordinary starting salaries;

3. They would enroll in a training course at the bank's expense, on the bank's premises, conducted by the Katharine Gibbs School, to be completed in approximately 40 weeks by going to classes three nights a week from 5:30 to 7:30 p.m.

An announcement bearing the details and requirements of the program was circulated among young women already employed after school by the bank. The announcement also made notice of the aptitude tests to be given by the Gibbs school and emphasized the careful screening and selectivity that would determine the acceptance of each applicant. Ninety-six bank employees responded. A sim-

Through daily activity a page gains intimate knowledge of the bank's mechanism — invaluable information for her secretarial future.

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(Circle No. 21 on Reader Inquiry Card)

Standards of dress

(From page 31)

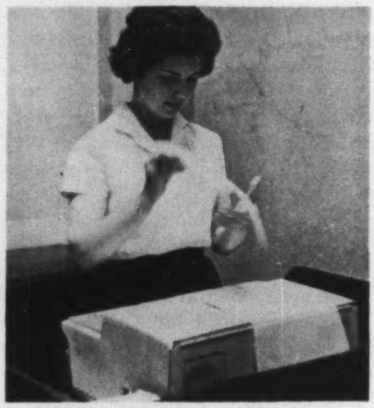
ilar letter shown to student applicants of the junior program received an equally enthusiastic response.

The aptitude tests, given on a Saturday by the personnel department, thoroughly tested each student's knowledge of grammar, spelling, punctuation, vocabulary, syllabication, reading comprehension and rate, and clerical ability. A personal interview was conducted by members of the personnel department to further determine the appearance, personality, and speech characteristics of each applicant. The results of the aptitude test, the personal interview, and scholastic record were brought together to determine the capabilities of the applicant. Thirty-one young women proved themselves qualified for the bank's new page corps.

Uniforms unsuitable

Uniforms were a logical mode of dress for the group, but several factors made them unsuitable in this particular situation: Each new batch of girls would require new uniforms if the proper standard demanded by a uniform was to be fulfilled; to enhance the page's appearance a uniform would have to be custom tailored; uniforms would require cleaning regularly; a wardrobe mistress would be required. Moreover, uniforms suit neither the personality nor the function of the pages—a group of young women awarded special opportunity because of their above-average ability and appearance. "To clinch the decision," said Miss Troneck, "a consensus of the girls indicated that they were not particularly enthusiastic over being uniformed."

White blouses and black skirts were chosen as the standard of dress for the pages. "Actually, the girls have a great deal of flexibility within these limits," Miss Troneck said, "They may wear any style of skirt they wish — circular, pleated, straight—or any style of blouse, as long as the combination is true black and white, and in keeping with the standards of a business office." The dress, however conservative, is quickly distinguished in a sea of dark business suits. A tour of the bank revealed pages moving quietly among the desks of bank officials. As they disappeared around corners or behind elevator doors, their presence expressed purpose and ability. When not carrying mail or running errands, the pages may retire to a small waiting area in view of the receptionist where they practice shorthand and catch up on homework until a small flashing light calls them to service.



Photocopying bank documents is one of the many preparatory routines performed by the dexterous page.

Information men and members of the page group who were not included in the new program were given an opportunity to choose from a number of jobs open to them. Each person was interviewed and placed in a new position to his complete satisfaction. No employee resigned because of conflict with the new program.

Formula for success

In response to a question on how the new page corps was being accepted, Miss Troneck replied that the program has been well received in all quarters. "It is progressing extremely well," she said, "and has met our highest expectations to date. Of course we won't receive the full benefit of the program until next year when members of the first group will become secretaries, but I think the success of the program is virtually assured. We offer young women a beginning, a future, and the best of training at our expense. In return, we are getting employees who serve us well during their apprenticeship, and who will eventually become first-class secretaries. We have confidence in this formula."

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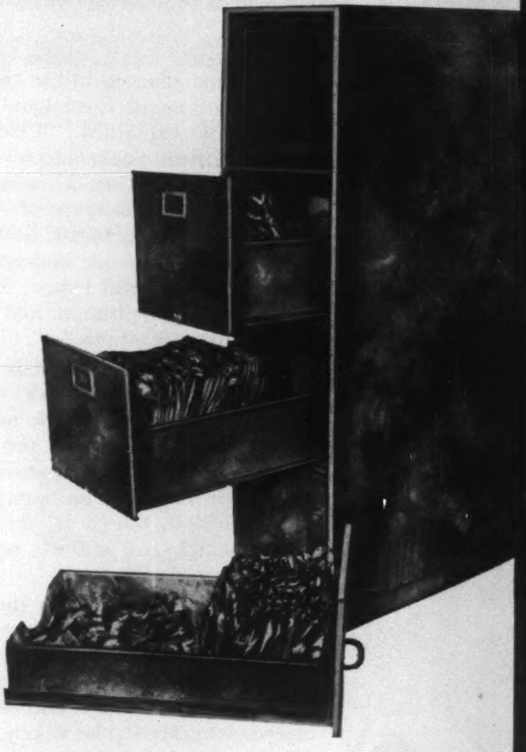

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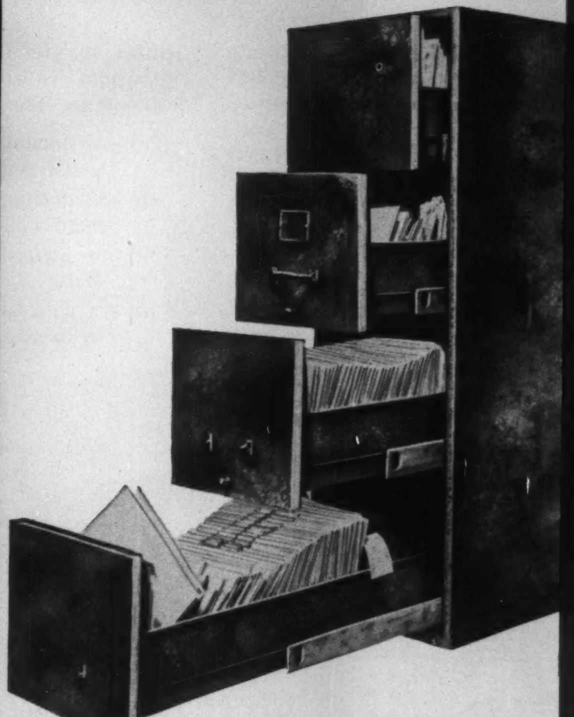

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BURROUGHS AUTOMATES OLDEST U. S. BANK

B 301 magnetic ink system handles checks at First Pennsylvania

A SPECIALLY designed electronic banking system created by the Burroughs Corporation went into operation last month at the nation's oldest bank, The First Pennsylvania Banking and Trust Co., Philadelphia. According to bank officials, the fully automatic system is the first of its kind in the world.

William F. Kelly, First Pennsylvania president, in explaining the system at a press preview on September 15, said that the new "master system" is actually based on five sub-systems. These are:

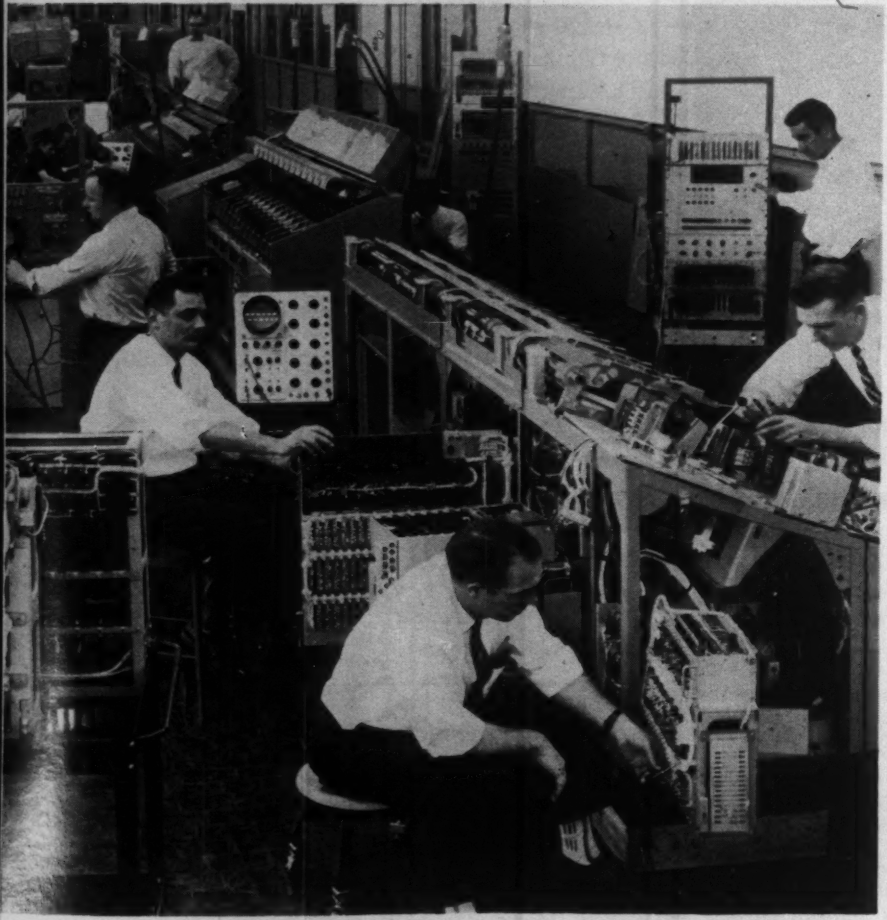
(a) — a document encoding and proof system.

(b) — a document processing system.

(c) — a sorter-lister-converter system.

(d) — a data processing computer with magnetic tape units.

(e) —a high-speed printer system.



Burroughs engineers put finishing touches on electronic sorter-readers for automated banking. Equipment works on principle of magnetic ink character recognition (MICR).

"We first plan to utilize the system for automatic check handling," Mr. Kelly explained. "Later we also plan to automate the processing of regular checking accounts, revolving credit, installment loans, mutual funds, personal and corporate trusts, payroll, management reports, the general ledger, including expense distribution, and other accounting operations."

Checkout of the system is being conducted on the bank's special checking accounts. Check out began with the delivery of the latest of the sub-systems to be installed—the B 301 magnetic document processing system, which is, according to Burroughs, an entirely new development.

The B 301 system uses the magnetic ink character recognition common language adopted as a standard by the American Bankers Association. Thus, MICR encoded media—checks, deposit tickets, batch tickets, and cash letters—serve as the major input media of the system. However, in addition to documents bearing magnetic characters, the master system can also accept punched paper tape, punched card, or magnetic tape input, Mr. Kelly stated.

Operating from pre-coded MICR customer checks, the B 301 system electronically "reads" the checks, edits the coded data, sorts, accumulates totals, classifies, prints listings, and, finally, converts edited information to magnetic tape for subsequent computer processing.

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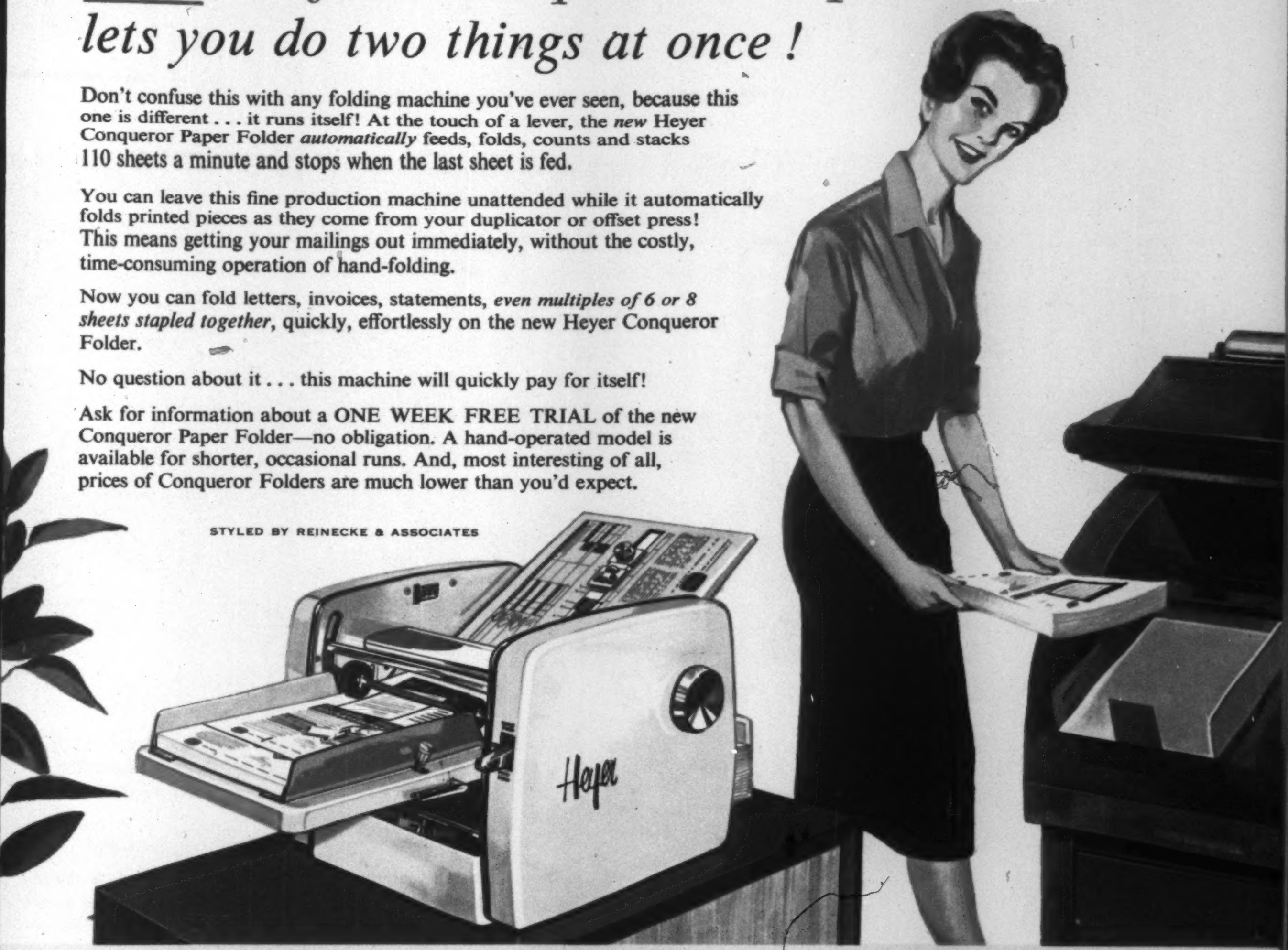

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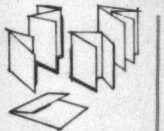

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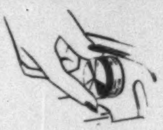

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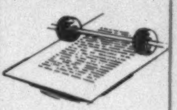

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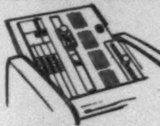

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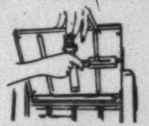

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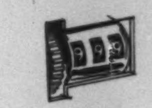

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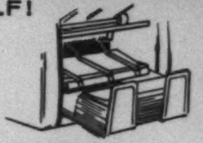

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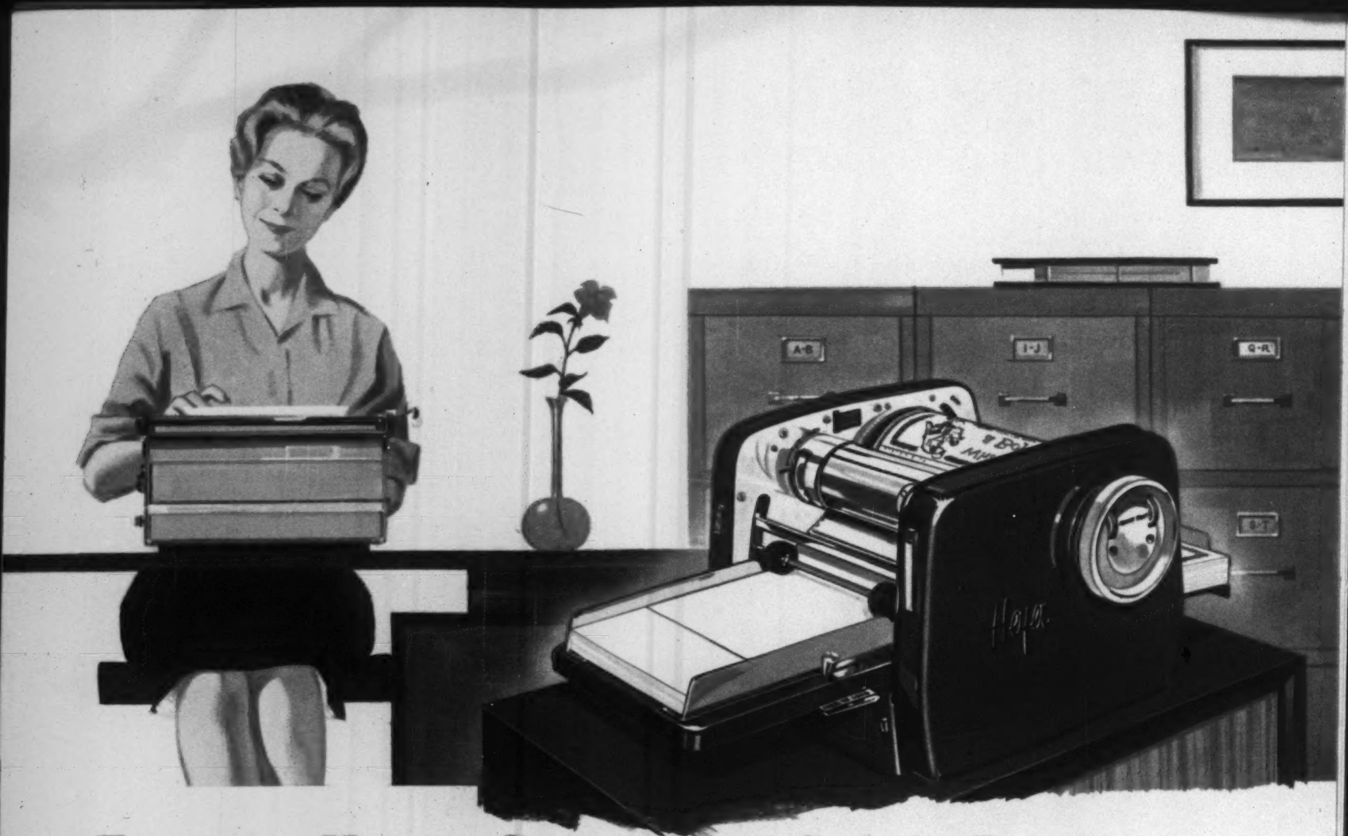

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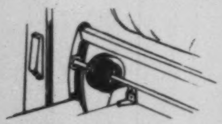
Here's spirit duplicating at its easiest and best! At the touch of a lever, the electric Heyer Conqueror Spirit Duplicator feeds, prints and counts 330 copies in 3 minutes—and shuts off automatically when the last sheet is fed.

Everything is done automatically, leaving you free to do other work at the same time. Write, type, rule or draw on a master. Use as many as 5 colors. Conqueror Duplicators will print them in perfect register in a single operation. New Sheet Separator Feed, with Adjustable Feed Wheels and Feed Tension Control, assures positive, nonskip feeding of thin papers to cards—*even newsprint*—from 3 x 5″ to 9 x 15″ in size.

Here's a machine that quickly pays for itself!

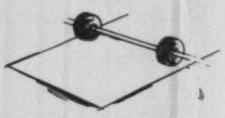
For those whose needs are occasional, a hand-operated model is also available. And, most interesting of all, prices of Heyer Conqueror Duplicators are much lower than you'd expect.

ALL HEYER CONQUEROR SPIRIT DUPLICATORS OFFER THESE UNEQUALLED FEATURES!



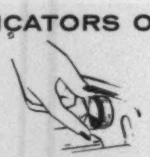
Sheet separator feed

Vastly improved Sheet Separator Fingers eliminate side retainers and tricky adjustments.



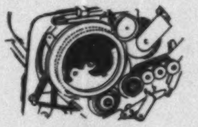
Adjustable feed wheels

Contact paper at outer edges for positive forwarding one sheet at a time.



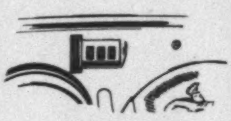
Feed tension control

Assures non-skip feeding, lightweight papers to cards—even newsprint.



Unique feed drive

Nationally honored for engineering excellence, smooth forward motion.



Counts as it prints

Shows exact number of copies printed... quickly re-sets to zero.

☐ Please send literature and information about a ONE WEEK FREE TRIAL of a Conqueror Paper Folder.

☐ Please send my FREE Personalized Memo Pad and information about a ONE WEEK FREE TRIAL of a Conqueror Spirit Duplicator.

NAME TITLE

COMPANY

ADDRESS

CITY ZONE STATE

OUR PHONE NUMBER IS

HEY135

Send for your **FREE** *personalized memo pad and*

MAIL CARD TODAY

TOM JEFFREY

FOR INFORMATION AND DETAILS ABOUT A **ONE WEEK FREE TRIAL**

Heyer

HEYER INCORPORATED
1850 South Kostner Avenue, Chicago 23, Illinois

Printed in U. S. A.

Data are processed on Burroughs 220 computer

check sorter used in the system reads and sorts items automatically at speeds up to 1,560 items per minute.

The system operates in this fashion:

Customer checks — already precoded with account number and bank routing symbol in magnetic characters before being issued to the customer — are received after being cashed and run through a Burroughs P 703 Amount and Account number printer. The P 703 prints in magnetic characters the amount of the check and also proves it.

Now fully coded — bearing account number, routing symbol, and amount in magnetic characters—the check is fed into a B 101 sorter-reader, which sorts all checks while simultaneously transmitting all data on each check to a control unit.

The control unit edits and tests incoming data to determine item acceptance and distribution. It also accumulates totals for settlement and control, directs sorting of the items, and selects the pockets into which they fall. In addition, it controls the form in which the data are fed into an electrostatic multiprinter for listing information.

Simultaneously, the control unit converts acceptable item information to magnetic tape for processing through the 220 computer. The tape is subsequently used for updating customers' accounts and preparation of customer statements, all of which can be handled completely automatically.

The electro-static master printer, which records data at exactly the same rate as the sorter reader operates so that no bottleneck develops in the operation, prepares a master listing tape, which provides a record of every item processed by the sorter-reader in the same sequence in which it arrives from clearing house or Federal Reserve bank. In addition the list shows the batch number, source code, cash letter total, customer account number, and the amount of every item processed. When all items have been processed, the batch total is automatically balanced with the item total, and either a zero-settlement, or the difference is printed on the master tape before the next batch is processed.

At the end of each batch run, settlement data are printed out on the master tape by the printer at the rate of 3,000 words per minute.

At the press conference which introduced the new system, Kelly stressed the "urgent need" in banking for such specialized high speed systems, pointing out that the First Pennsylvania's deposit division receives more than 700,000 individual checks daily.

"These checks alone would make a stack over 300 feet high—taller than our main office building," he declared. "Each must be promptly and properly credited to the right account.

IBM data transmission unit links computer memories

Direct communication between the memory units of two computers in different locations is now possible over regular telephone or telegraph wires, IBM has announced.

The company recently introduced its 1009 data transmission unit, which is designed to link the magnetic core memories of two or more solid state 1401 computers over standard commercial communications channels.

Both computers can continue normal operations, even while transmitting information back and forth at the rate of 150 numbers or letters a second.

Although communication was possible between computers at an earlier date, it was an off-line proc-

IBM 1009 data transmission unit enables computers to hold direct telephone or telegraph "conversations." Here, operator dials distant computer to establish contact.

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SO EFFICIENT,
SO THRIFTY!"

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☐ Please send me Ever Ready's Label Idea Kit.

NAME .... TITLE ....

COMPANY ....

STREET ADDRESS ....

CITY, ZONE, STATE ....

(Circle No. 23 on Reader Inquiry Card)

ess resulting in the creation of punched cards at the receiving end. The cards in turn had to be fed into a computer before the information they contained could be used. The new system provides direct linkage between the magnetic core memories of each computer without the necessity for the intervening step.

Gilbert E. Jones, president of the company's data processing division, in making the announcement of the new data transmission unit, said:

"In this new trend in IBM Teleprocessing our engineers have made the computer itself act as a data transmission terminal while still retaining internal processing abilities. It is designed to meet the high-volume processing needs of decentralized business utilizing high-speed equipment such as the 1401."

Two major programs seek standard machine language

Two major cooperative programs aimed at establishing a standard international "language" for both data processing machines and conventional office machines were announced last month by the Office Equipment Manufacturers Institute.

Both programs were organized under the procedures of the American Standards Association.

Dr. Joseph W. Barker, former dean of the Columbia University School of Engineering, will give guidance to both programs and will act as director of the organization of the data processing standardization program.

Main effort of the data processing program will be aimed at the development of logical systems standards, including a common language, which will enable users of electronic data processing equipment to interchange information and programs among computers of different manufacture. The office machines standardization program will relate to the establishment of standard terminology and definitions, standard output formats defining symbols and characters, and other fundamental elements.

New Recordak RELIANT 500 Microfilmer is only half the size you'd expect a large-volume microfilmer to be

New Recordak Microfilmer takes up to *1,000 pictures per minute!*

The fronts and backs of 500 checks—1,000 pictures in all—can be taken in 1 minute with the new RELIANT 500 Microfilmer.

Larger sized records—up to 12 in. wide, any length—are microfilmed at proportionate speeds. For example, 185 letter-size records can be copied in a minute for a fraction of a cent each!

Speeds reference, too! Items are also indexed on the film in the automatic microfilming operation. Code lines lead you right to the pictures you want when you refer to films in a Recordak Film Reader.

New RELIANT 500 boasts many features. For example, film units are instantly interchangeable, allowing various departments to microfilm with their own units . . . preserving record continuity, and reducing need for extra microfilmers.

Free folder gives details on this new microfilmer which brings increased efficiency to office routines.

RECORDAK®

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming

—now in its 33rd year

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415 Madison Avenue, New York 17, N.Y.
Send free 4-color folder describing new Recordak RELIANT 500 Microfilmer.

Name________________ Position__________
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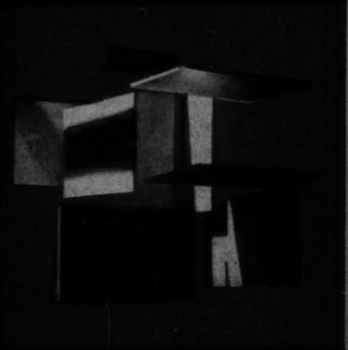
(Circle No. 24 on Reader Inquiry Card)



NEW PERSPECTIVES

with gypsum drywall systems

DESIGN CREATIVELY
SPEND CONSERVATIVELY

with five new partition or ceiling and wall furring systems by U.S.G.

For the first time in architectural history, here are drywall systems tailor-made for your non-residential construction—systems that meet the demands of your institutional, industrial, and commercial building, including that all-important consideration: economy! Only U.S.G.'s new drywall systems give you all these construction advantages: sound control, fire control, performance control, cost control . . . plus design flexibility! They save time . . . save space . . . save money—and they include movability, an essential characteristic in this day of constantly fluctuating space requirements. Whatever your non-residential planning, U.S.G.'s "new perspectives" can fit so many of your requirements, so well, it will pay you to consider them in your planning. Discover today how they can help you design creatively . . . spend conservatively! Call your local gypsum drywall contractor, your U.S.G. sales representative, or write United States Gypsum, Dept. 122, 300 W. Adams St., Chicago 6, Illinois.

UNITED STATES GYPSUM
the greatest name in building

Photography: Arthur Shay

Work output increases, morale rises when companies use

THE STANDARD PRACTICE INSTRUCTION

By WALTER S. ATHEARN
Management Consultant
A. B. Cassedy & Associates, New York

THE VALUES in Standard Practice Instructions are not usually realized. These working plans—called SPIs or sometimes SOPs (Standard Operating Procedures)—define the routines of a person's job. Though their scope is far from grand, they provide good dollar savings for a company.

When a full operating department, for instance, works by them, work seems to get done faster and more smoothly. Moral is high, and people enjoy their work more.

The mere organizing and listing of a person's tasks and how they are done makes a planned approach possible. More work is accomplished with less personal effort.

The SPI is the detailed description of the more general Systems Procedure, which forms the basic outline. Using the SPI, each job is studied to find the best schedule for getting the programmed result.

The best time to provide SPI's for a group of jobs is when a full systems overhaul is being made. This can be done after the basic flow has been reworked; equipment, work-place, and paperwork changes planned; and personnel shifts decided upon. The step before the installation of a new system can be the SPI step.

Some would leave this step of detailed planning and training to the area supervisor to work out verbally with his people. Although this may take less planning effort, the result frequently is that the employees (and often the boss) will stretch out the required job — following Parkinson's Law — and no labor savings will show. A planned study, however, may find each of four jobs with one-fourth less work to do. A rearrangement of these functions can release one person from the task.

Standard Practice Instructions are similar in many ways to procedure write-ups.

1. They must have the approval of top management to be fully enforceable.
2. They should be easy to keep up to date, but require at least supervisory approval to control undesired changes and prevent too many at-random changes.
3. Indexing and binding of the SPI sheets should be practical and simple.

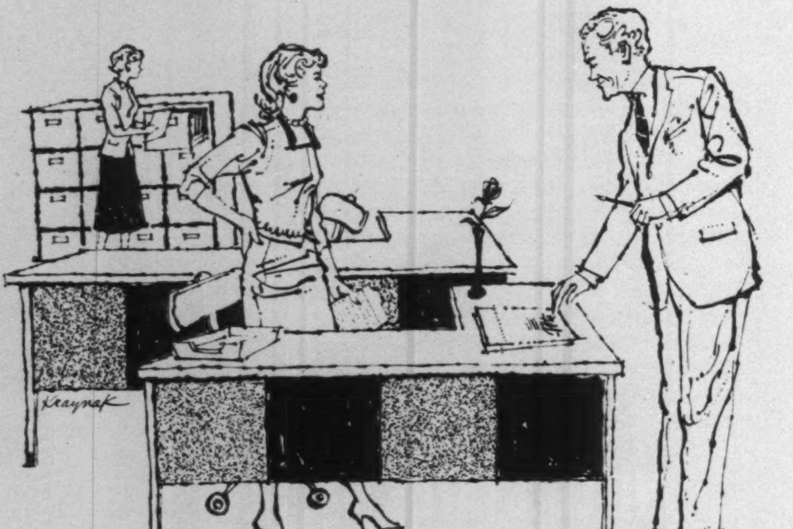
The differences from written procedures, however, are specific and important to success.

The SPI is not an outline of a day's routine; it describes how one person handles one job. To include more is confusing, makes the SPI too long, and makes sectional changes more difficult. Thus, several one- or two-page SPIs may cover the various daily routines of one person.

Simple English is criterion

The illustration of a Standard Practice Instruction on Page 43 covers its basic requirements.

1. The "Dept." and "Job" codes (top right corner) provide space to show the first four letters of the department name and employee title so that in any master manual of many jobs it is easy to find a particular SPI. In large companies it may be further broken down into "Dept.," "Section," and "Job." When coding, it is not necessary to include the name of the particular procedure, as thumbing through the



Permitting the supervisor to train his people verbally may result in no cost saving.

SPIs for a particular job is about as quick to do.

2. The heading boxes identify the particular SPI. The first word of the "Department" and "Job Title" boxes must always be the words used in the corner indexing. The first issue of an SPI shows only "Date Effective." Subsequent issues have this original date plus the "Date Revised" of the most recent issue.

3. The body of the SPI should provide the maximum space between the first and last convenient typing lines on the SPI master. This is the production section of the page, and the more room for instructions, the fewer pages will be necessary in the manual. The "When" column tells the action that begins a routine; the "Instruction" spells it out.

4. Approvals are at the bottom of the page (below the convenient typing area). Each sheet of each SPI should be signed off to give management authority to it or to any changes in the routine. Thus, a single page of an SPI can be revised without affecting the other pages.

5. The left margin of the form is an inch wide to allow for file punching and use in a binder.

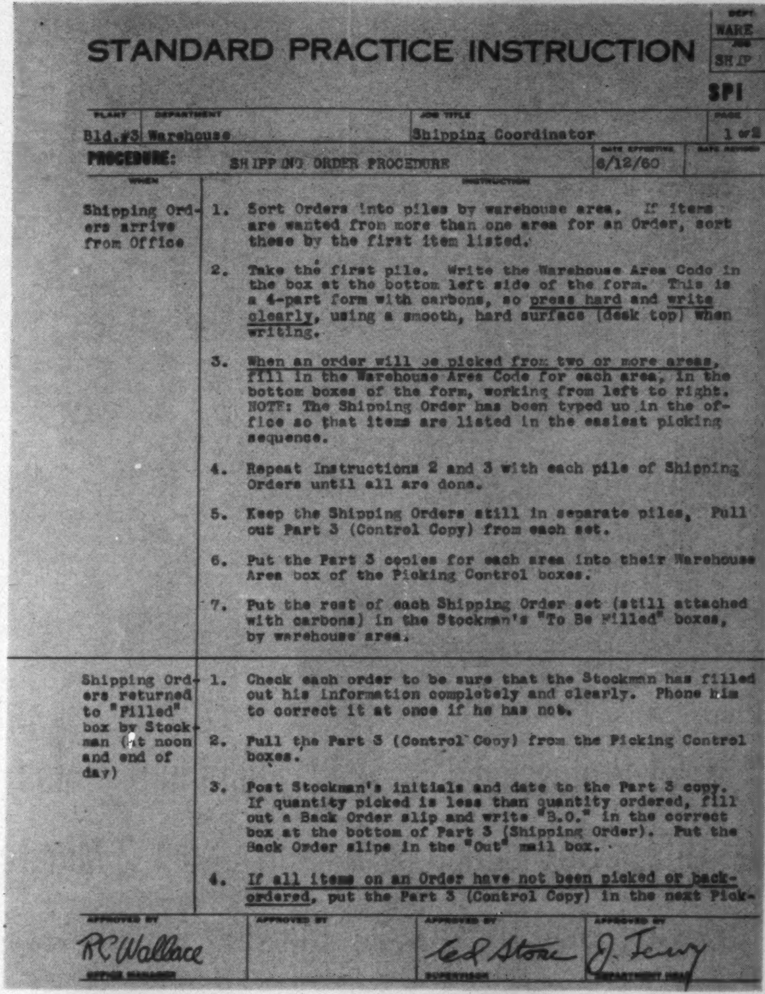
While simple, effective English is the criterion of any procedure write-up, it is especially important that the Standard Practice Instruction be written in short, elemental words and easily read sentences to be clear and explicit. An SPI written any other way confuses rather than helps. These three hints may help:

1. Use short, common words. If two words have approximately the same meaning, use the shorter, more common word — "get" instead of "procure" or "obtain;" "give" instead of "deliver;" "write" or "type" instead of "prepare;"

2. Break down the instruction to one thought per sentence whenever possible.

3. Be certain that trade terms and plant colloquialisms, when used, are commonly understood by the person doing the job and will be picked up quickly by the new employee who uses the instruction in his training.

To write an SPI in English elemental enough to be completely clear to the employee on his first reading is not easy. The most skilled procedure writer must train himself



STANDARD PRACTICE INSTRUCTION

DEPT WARE
JOB SHIP
SPI

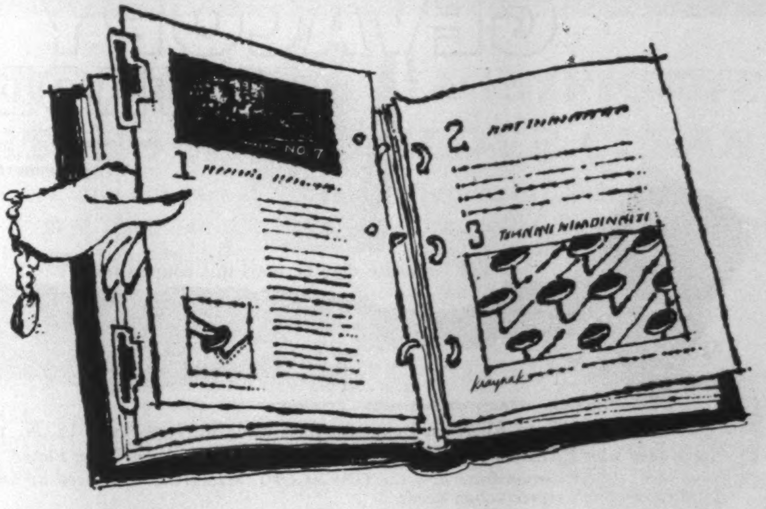
PLANT	DEPARTMENT	JOB TITLE	PAGE
Bld.#3	Warehouse	Shipping Coordinator	1 of 2

PROCEDURE:	DATE EFFECTIVE	DATE REVISED
SHIPPING ORDER PROCEDURE	6/12/60	

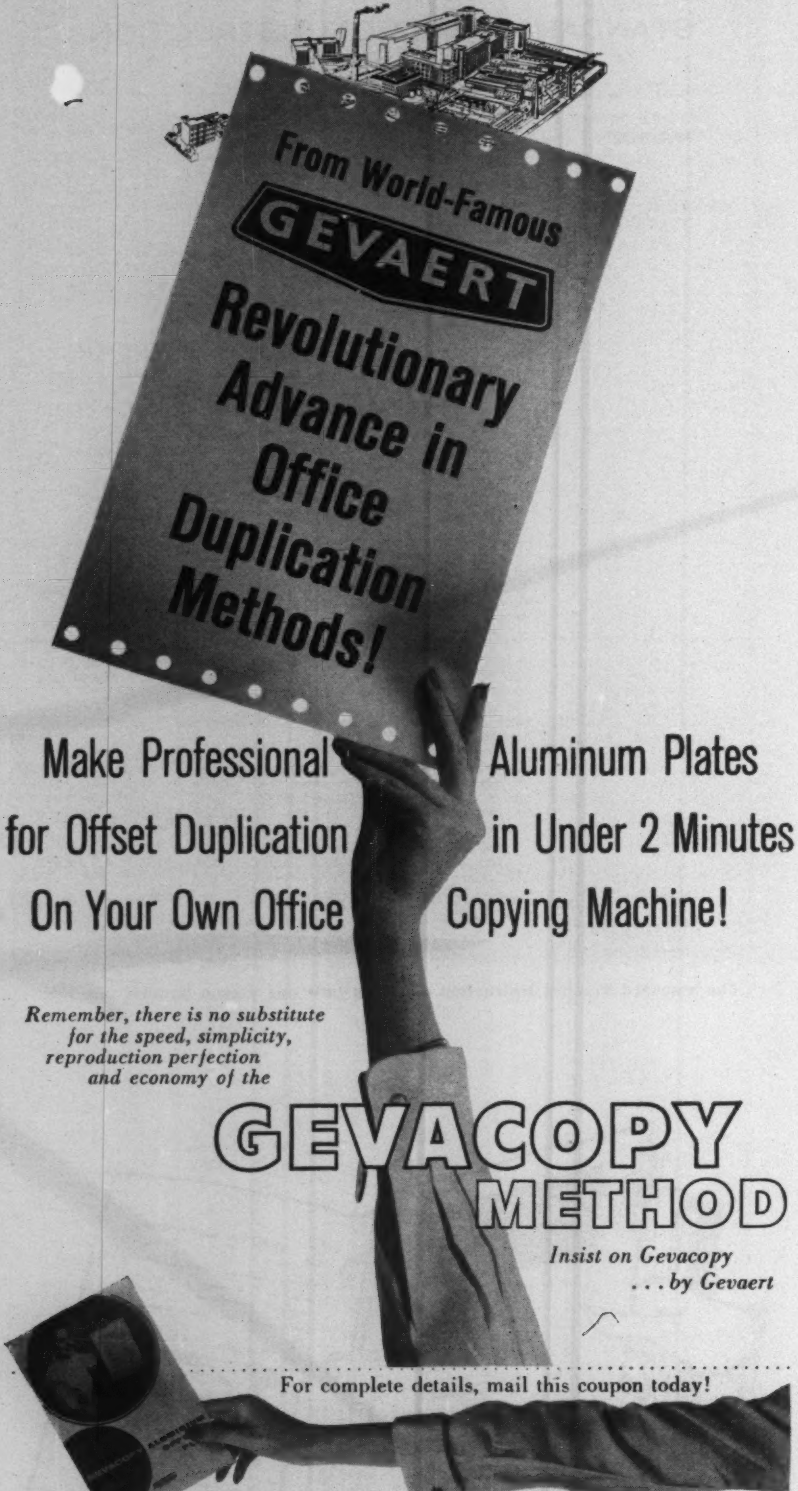
WHEN	INSTRUCTION
Shipping Orders arrive from Office	1. Sort Orders into piles by warehouse area. If items are wanted from more than one area for an Order, sort these by the first item listed. 2. Take the first pile. Write the Warehouse Area Code in the box at the bottom left side of the form. This is a 4-part form with carbons, so press hard and write clearly, using a smooth, hard surface (desk top) when writing. 3. When an order will be picked from two or more areas, fill in the Warehouse Area Code for each area, in the bottom boxes of the form, working from left to right. NOTE: The Shipping Order has been typed up in the office so that items are listed in the easiest picking sequence. 4. Repeat Instructions 2 and 3 with each pile of Shipping Orders until all are done. 5. Keep the Shipping Orders still in separate piles. Pull out Part 3 (Control Copy) from each set. 6. Put the Part 3 copies for each area into their Warehouse Area box of the Picking Control boxes. 7. Put the rest of each Shipping Order set (still attached with carbons) in the Stockman's "To Be Filled" boxes, by warehouse area.
Shipping Orders returned to "Filled" box by Stockman (at noon and end of day)	1. Check each order to be sure that the Stockman has filled out his information completely and clearly. Phone him to correct it at once if he has not. 2. Pull the Part 3 (Control Copy) from the Picking Control boxes. 3. Post Stockman's initials and date to the Part 3 copy. If quantity picked is less than quantity ordered, fill out a Back Order slip and write "B.O." in the correct box at the bottom of Part 3 (Shipping Order). Put the Back Order slips in the "Out" mail box. 4. If all items on an Order have not been picked or back-ordered, put the Part 3 (Control Copy) in the next Pick-

APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY
RC Wallace		Ed Stone	J.
OFFICE MANAGER		SUPERVISOR	DEPARTMENT HEAD

The Standard Practice Instruction describes how one person handles one job.



A master file of SPIs can be kept in a binder. This file must be kept up-to-date.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NAME .... TITLE ....

(Circle No. 27 on Reader Inquiry Card)

SPI's must be timely

to it. Perhaps the best way is to rough it out in good procedure form, and then pick it apart sentence by sentence and word by word, always striving for simpler and more direct presentation. Change words freely, break up sentences, repeat thoughts rather than expect them to be carried over. Then, when further improvement seems impossible, take it to the people who will use it. As they read it, notice closely if they must stop to think about what is said. If they do, revise again.

SPI's must be easy to set up and quick to reproduce so that they can be kept up to date with the job as it is actually performed. The SPI master should be printed onto either offset or spirit duplicating masters, whichever is available or most convenient, as these are currently the most common and inexpensive processes for duplicating in quantity.

The person or group that originates SPI's should keep a full manual of all that are issued. Department heads and supervisors should have partial manuals of those SPI's that affect their operation. Each employee whose job is written up needs a copy of each SPI that affects him.

The simplest and most inexpensive binder for several SPI's is the conventional three-ring, loose-leaf binder, labeled, perhaps, on the binding edge with a ring-book binder clip and on the cover with a gummed label. For smaller SPI manuals, the report cover, with sheets held in by brass fasteners, does the job.

Distribute SPI's only to those who will use them. A duplicating run of 10 to 20 copies is usually adequate.

There is rarely any need for an SPI index because only a few complete manuals are necessary. The right-corner coding makes finding simple.

One final ingredient is vital to the success of an SPI program. Unless SPI's are actively used, promptly brought up to date, and backed by management, they become as useless as unread books on a shelf. Only live, working SPI's, with those who use them actively contributing to their success, are worth preparing. They can be worth many times their cost and effort.

OUR JOB: KEEPING KAISER'S MAGNIFICENT NEW HEADQUARTERS WHITE-GLOVE CLEAN

No job is too big for the Giant Janitor, and our recent assignment proves it. The new Kaiser Center, Oakland, California, is the largest office building west of Chicago; 980,000 square feet to be exact. It is only one of the thousands of buildings, large and small, that American services each year throughout the U. S. and Canada. Like to put our skill and experience to work for you? Just give us a call.

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(Circle No. 28 on Reader Inquiry Card)

ELECTRONIC COMPUTER DISPLAY WILL HIGHLIGHT BUSINESS SHOW

CompuCenter will be "show within a show" at Coliseum

HIGHLIGHT OF THE 1960 National Business Show, which will be held in the New York Coliseum Oct. 24-28, will be a display of electronic data processing equipment known as the CompuCenter. This display will bring together six computer manufacturers in a "show within a show" at the center of the exhibits.

The cooperative display, which will contain computers and peripheral data processing equipment valued at more than $2 million, will occupy 8,000 square feet on the second floor of the Coliseum. Admission to the CompuCenter will be by special invitation, available from the six exhibitors and the National Business Show.

The six computer manufacturers and the "hardware" they will display are: Bendix Corporation, G-15 general-purpose digital computer and accessory equipment (The company hopes to show its new G-20, but plans are indefinite.); Control Data Corporation, Model 160 computer and Model 180 data collector; Monroe Calculating Machine Company, the full line of Mark IX, X and XI Monorobots; Philco Corporation, peripheral data processing equipment, including a high-speed printer, tape transport, and high-speed card reader; Friden, Inc., Flexowriter, Tape Code Converter, Collectodata, and CTS Computyper; Remington Rand Univac Division of Sperry-Rand Corporation, solid-state Univac 90. (Radio Corporation of America had planned to exhibit but was forced to withdraw when customer orders depleted systems inventories.)

The CompuCenter is not the whole show, however, but merely the center of the exposition—just as computers are the heart of automation in today's offices. Surrounding the center will be exhibits of more than 100 machines, products, services, and supplies essential to the preparation of data, filing and storage of data, reproduction and distribution of data, inter- and intra-company communications, and personnel for handling data.

All exhibits will be on the second floor of the Coliseum.

Thus, the show emphasizes the fact that automation is not one product or one system, but a series of integrated, deliberately planned steps. While the computer is important, and the *right* computer to do the *right* job is vital, the computer—like all other equipment in the complete business system—is only a means to an end. With or without an electronic data processing system, the office administrator knows that proper techniques and equipment must be provided for all the phases of processing and preparing data. Accordingly, his basic machines—typewriters, adding machines, and calculators—are not only important in themselves, but are equally important in the overall EDP system.

Conference series scheduled

Supplementing the exposition, and being held concurrently with it, will be a series of conferences on the effects of electronic data processing. Delivering the keynote address on Monday, Oct. 24, will be Robert M. Smith, editor of *Office Management and American Business,* who will discuss the importance of electronic data processing in a speech entitled "The Impact of EDP on American Business."

Speakers scheduled to participate in the technical conference sessions include the following: R. M. Gleason, chairman, Seminar Advisory Committee, Office Executives Assn.; William Doherty, sales manager, Computers Division, Philco Corp.; W. J. Jacquette, manager, Management Services Division, Ernst & Ernst; R. L. Hareell, executive vice president, Farrington Manufacturing Co.; A. S. Sapega, director, data processing, Lybrand, Ross Bros. & Montogmery; Albert Summers, director of business analysis, National Industrial Conference Board; O. P. Staderman, director of marketing, Bendix Computer Division, Bendix Corp.; Joseph A. Reres, associate, Caywood-Schiller Associates; J. W. Haslett, manager, methods and procedures, Shell Oil Co.

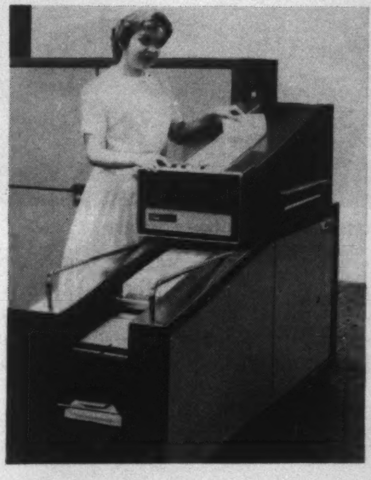
Also on the program will be Albert Kushner, partner, Cresap, McCormack & Paget; Frank B. Gardner, partner, Arthur Anderson & Co.; Gordon Smith, director of marketing, Remington Rand Univac Division of Sperry Rand Corp.; E. F. Murphy, president, Murphy Associates; James G. Miles, vice president, marketing, Control Data Corp.; Walter K. Clifford, vice president, marketing, Monroe Calculating Machine Co.

The conferences and the 56-year-old exposition are sponsored by the Offices Executives Association of New York, a non-profit organization of nearly 800 management executives.

National Business Show officials anticipate an attendance in the neighborhood of the 88,194 individuals who visited the 1959 show, which was also held in the Coliseum. An audience survey of the 1959 show revealed that almost two-thirds of the visitors had attended the show before and that 41 per cent of the visitors had gone to the show to investigate specific means of solving a problem.

(A preview of some of the new products to be exhibited at the show begins on page 48.)

"Hardware" in the CompuCenter

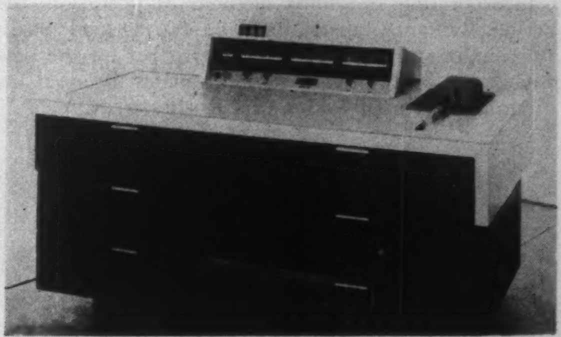


Philco Corp.'s display will be confined to peripheral equipment such as its high-speed card reader (above), which is capable of reading 2,000 cards a minute.

Friden will demonstrate autowriting and invoicing on its input equipment. Shown above are Punched Tape Code Converter (foreground), Flexowriter (background).

Monroe's Monorobot XI (above) will demonstrate processing of by-product tapes from cash registers of chain stores. Also to be displayed are the other members of Monorobot series: IX and X.

Accounting and payroll applications on a G-15 (above) will be feature of Bendix display. Company hopes to demonstrate its new G-20, with accessories, but plans are still indefinite.

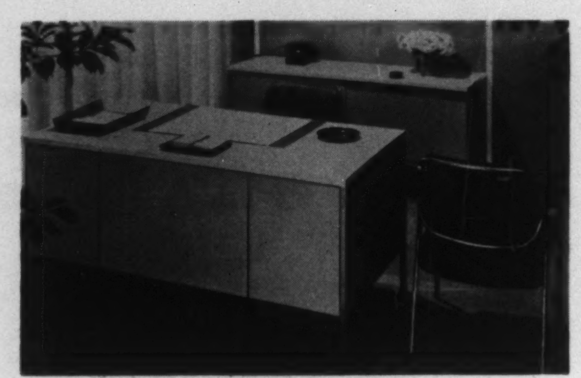


Control Data's small-scale 160 (above) will be shown along with 180 data collector, which will demonstrate source-data gathering.

On its Solid-State 90 (below) Remington Rand will perform customer billing and commission calculation, utility billing, and a payroll system.

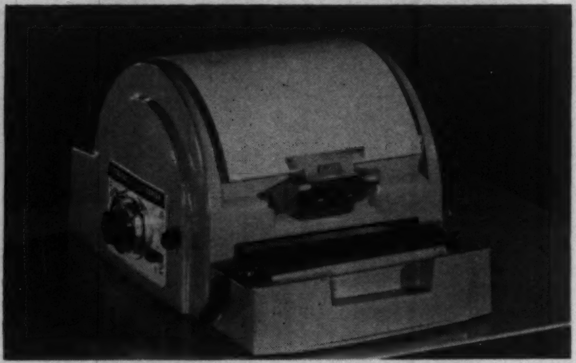
NEW PRODUCTS
TO BE SHOWN AT
NATIONAL BUSINESS SHOW

(The regular new products section, entitled "New Systems and Equipment," begins on page 64.)



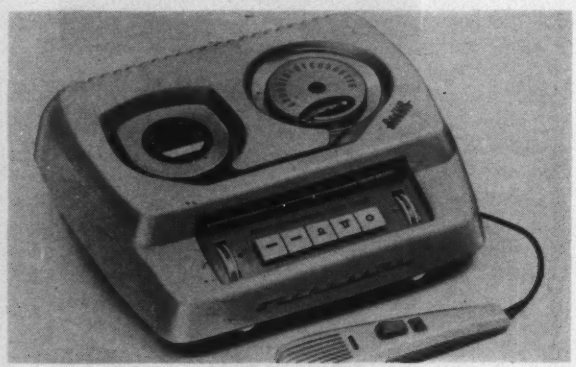
Contemporary furniture group N-1

Known as the AM 500 Group, a new line of contemporary furniture features executive desks with overhang tops, chairs, tables, and machine platforms. Tops of all items are wood core with laminated plastic. Art Metal, Inc., 50 W. 44th Street, New York 36.



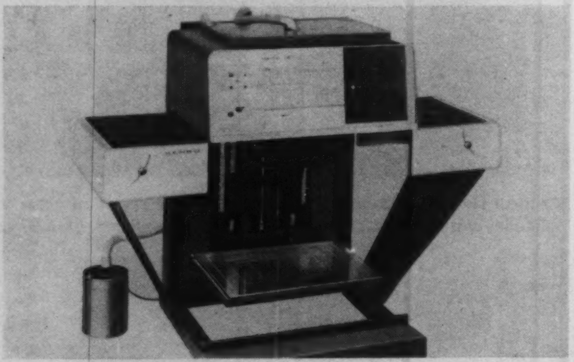
Copying machine N-4

Incorporating simplified methods of operation, the Verifax Bantam Copier, Model B, is being made available in three shades of green. Copy paper for the new model, 8½ by 11-inch in size, eliminates the need for trimming. Eastman Kodak Co., Rochester, N. Y.



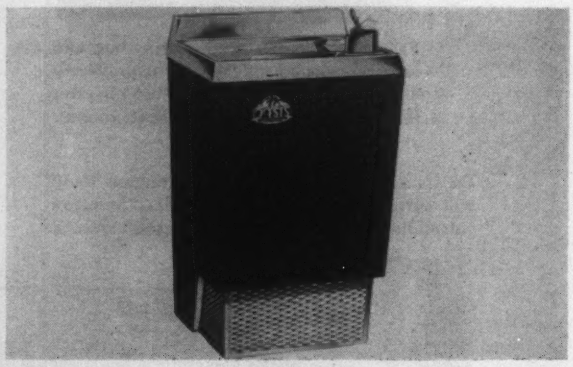
Transistorized dictator N-5

Fully transistorized, the Stenorette-T offers up to 45 minutes of dictation on a reusable magnetic tape. A single button on the microphone/speaker controls all the functions of the machine. DeJur-Amsco Corp., 45-01 Northern Blvd., L. I., N. Y.



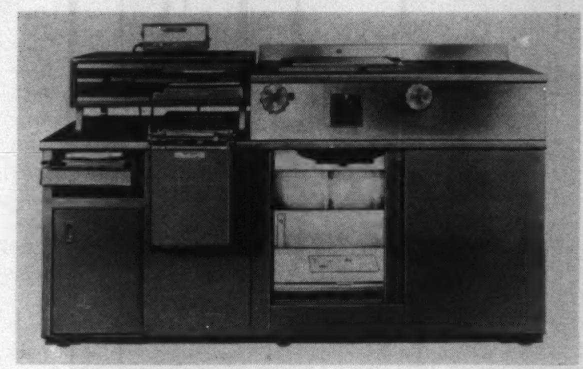
24-inch camera N-8

Exposures up to 18 x 24 inches can be made with the Kenro "Vertical 24" camera. Used primarily for the production of line and halftone negatives, an accessory head can also make Ektalith, Gevacopy and xerographic exposures. Kenro Graphics, Inc., Cedar Knolls, N. J.



Water cooler N-9

Compact Oasis water cooler can be mounted directly on the wall at any height above the floor. Finished in a brown vinyl plastic, the cooler is available in both 7 and 13 gallon capacities. The Ebco Mfg. Co., 265 N. Hamilton Road, Columbus, Ohio.

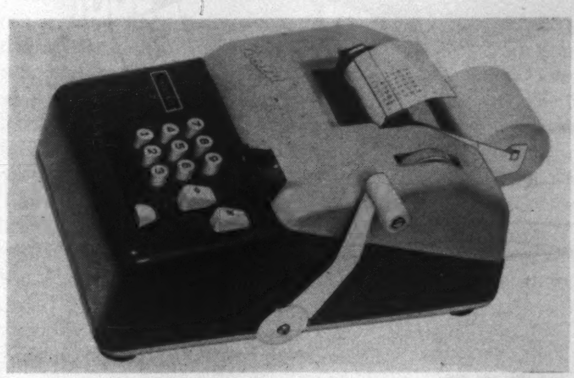


Vertical camera **N-2**

Designed for use with Gevacopy, Ektalith, and other matrix-transfer processes, the Vertical 18-inch TransferMate will serve equally well in the production of regular line and halftone negatives in normal light. M. P. Goodkin Co., 112 Arlington St., Newark, N. J.

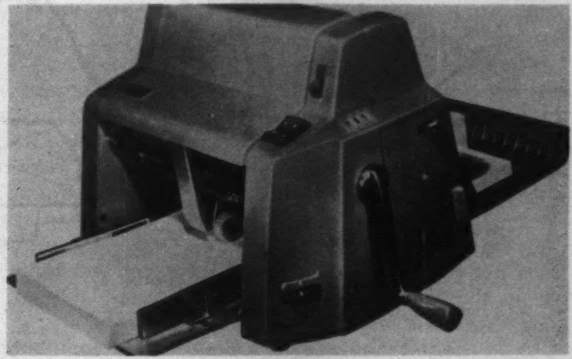
Mobile storage system **N-3**

Increased storage capacity is available through the use of a mobile storage unit. Open shelf files, tab card files, and other methods of storage can be accommodated by the rail-operating system. Dolin Metal Products, Inc., 315 Lexington Ave., Brooklyn, N. Y.



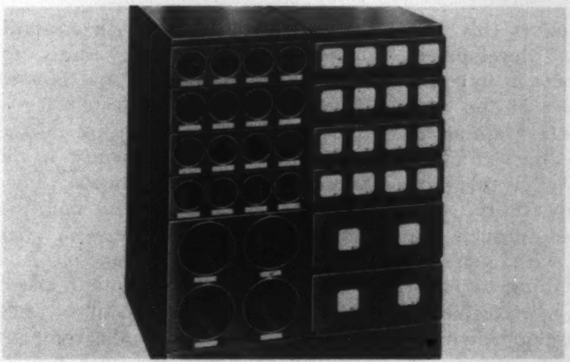
Ten-key adding machine **N-6**

The Everest "Plurima" is a compact, ten-key adding machine with a light action and a two-color ribbon. The small machine features Automatic Credit Balance and is covered by a 10-year guarantee. Alma Office Machine Corp., 34 E. 30th Street, New York 16.



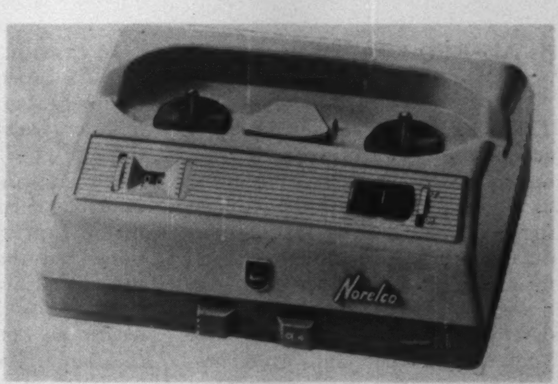
Electric duplicating machine **N-7**

Twin cylinders, printer's paste ink, and a silk screen are the components said to be responsible for a clean reproduction job, from start to finish, when using the Rex-Rotary automatic, electric duplicator. Bohn Duplicator Co., 444 Park Ave. South, New York 16.



Tubular files **N-10**

Sheets up to five feet in width by any length are stored in small and large tube units consisting of four Duro-tubes in a steel housing, with or without spring latched door. Units stack to form single file. Plan Hold Corp., 5204 Chakemco St., South Gate, Calif.



Dictating machine **N-11**

Model 75 dictating and transcribing machine features magazine loading of magnetic tape recording medium. A flick of a switch enables the portable machine to record telephone conversations. North American Philips Co., 230 Duffy Ave., Hicksville, N. Y.

EXECUTIVE EVALUATION

RATE YOUR SUPERVISOR

Supervisory self-development program at Esso Research pays dividends in greater efficiency, improved morale

By ALFRED K. ALLAN

THE OLD AXIOM that the boss's actions are above criticism is coming in for a complete overhauling at the Esso Research and Engineering Co., Linden, N. J. Here, subordinates are judging the work performances of their supervisors in a new and unique supervisory self-development program called "Rate Your Supervisor," and everyone—supervisors and subordinates alike—is benefiting.

P. W. Maloney, section head for salary administration and special studies, and John R. Hinrichs, a staff member of the research group, who administer the program for Esso, explain its motives this way: "Most supervisory development training programs now in force fail to cover every aspect of the individual. They include training in the basic principles and techniques of management, as well as role playing in various supervisory situations, but they don't provide the supervisor himself with personalized guidance, something he really needs and wants. To be truly effective, supervisory development must be self-generated, and in order to do this the supervisor must know all his weak points and strong points first hand. This we are doing with unusual completeness in our 'Rate Your Supervisor' program."

The program consists of several rating forms which each subordinate fills out if he wants to. It was begun in 1957 and is used for the engineering firm's 3,000 employees, 1,400 of whom are ranked as professional. Anonymity is the keyword in every operation. Since the rater doesn't sign his name to the forms, he can rate with complete freedom and candor. And only the supervisor himself knows how his subordinates have rated him; no one else in the company sees the ratings at any time. A code number is assigned to each supervisor beforehand, and only this number is put on the rating forms, so that the supervisor's name is kept anonymous. Only a secretary in another department knows to whom each code number belongs. To further preserve anonymity, at least four subordinates must rate each supervisor at the same time, or no one can rate him. In this way, the supervisor can't know which of his subordinates rated him. The subordinates also fill out a second form on the man to whom the supervisor reports.

There are three ground rules in the program: New professional employees are excluded, raters evaluate the next two higher levels, and other than present supervisors are sometimes rated. A thorough explanation of these rules, how the ratings will be used, and measures to preserve anonymity are explained to all participating employees.

An IBM 705 computer figures out a percentage breakdown of the ratings, and the supervisor is given this plus a percentage breakdown of ratings on all supervisors at his level in Esso Research. This latter breakdown enables him to compare his performance against the norm. The entire report, ratings, and breakdowns are returned to the secretary who knows the code names. She then sends the reports, in a sealed envelope, to the proper supervisor. It is up to the supervisor himself to weigh all the suggestions, interpret everything before him, and make such changes and improvements in his own performance as he feels are necessary. Or, he can do nothing. The choice is completely up to him. In any case, he is the only one who knows or will ever know how his subordinates have rated him.

The rating forms themselves are direct and concise in scope. Each form begins with a check list of personal traits that includes such points as "good technical man," "considerate," "good listener," and others—37 in all—on which the rater can mark one to six. The ratings range from one, "fits very well," to six, "doesn't fit at all."

No-holds-barred approach

Second is a check list of results pertaining to the group the man supervises. Here, the rater can evaluate four points covering the morale and productivity of the entire group, from one for "tops" to five for "below average." This is followed by 26 points geared to a thorough evaluation of the supervisor's techniques, which includes such points as "assigns work projects and outlines what he wants done," and "considers your personal wishes in making assignments," on which the rater can score one for "very dissatisfied" to four for "very satisfied."

Finally, there are five items that evaluate the supervisor's strengths and weaknesses: "Overall, what kind of job would you say this man is doing? What do you think of the results he gets? The methods he uses?" "Do you like working for him? Why? Or, why not?" "In what respects is he a good supervisor?" "What are his main shortcomings?" "What do you think he can do about these shortcomings?" After each question is a sufficient amount of space for the rater to write his frank and constructive comments.

"I never realized how much I could improve my work performance until I got these ratings," one supervisor said candidly. In a survey recently conducted at the plant, some 88 per cent of the supervisors questioned said they had attempted to change some manner disapproved by subordinates in their ratings. Some 26 per cent of the subordinates questioned said they had noticed definite and lasting changes for the better in their supervisors since "Rate Your Supervisor" began, and 36 per cent saw short-term changes. Furthermore, a large percentage of both supervisors and subordinates at the company say that productivity at the plant has improved since the launching of this important program.

As Maloney and Hinrichs concluded: "There's no question that the ratings are providing our supervisors with a new tool for their supervisory self-development, coupled with some eye-opening insights into their work performance. And everyone is gaining from this straight-from-the-shoulder, no-holds-barred approach."

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At least four subordinates must participate in preparing the "executive report card."

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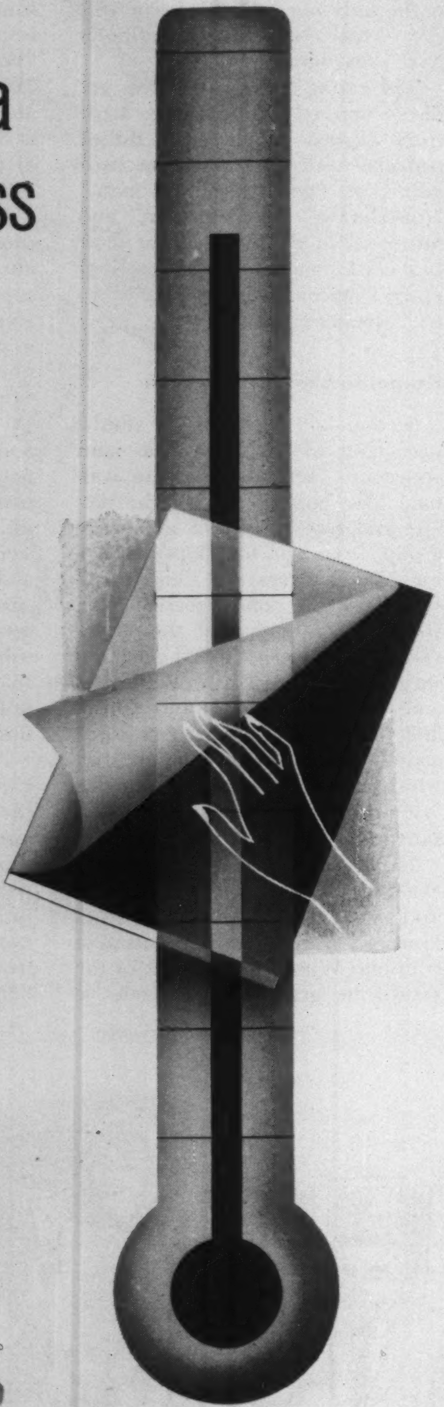

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RCA computer center will open in Chicago

RCA will open its fourth full-range, completely transistorized data processing center in Chicago this fall in what is projected as a national network, company officials announced recently.

The Chicago center follows earlier openings in New York's financial area; Cherry Hill, N. J., in the Philadelphia-Camden area; and Washington, D. C.

Charles M. Oderizzi, group executive vice president for RCA, said that the company's various centers may eventually be linked by a new communications system, DaSpan, to permit companies with offices in various cities to channel data processing back and forth.

Heart of the Chicago center will be an RCA 501 data processing system, and a full staff of RCA systems analysts, programmers, computer operators, and maintenance personnel will be on hand to help companies with tailor-made programs, Mr. Oderizzi announced.

"In the past," he declared, "data processing was something only the biggest firms could afford, on a rental or ownership basis. Now RCA's concept of data processing centers makes it possible to spread the cost so that firms of all sizes can obtain such service with financial benefits."

(Actually, many other computer manufacturers also maintain such service centers, and have for some time; both IBM and Remington Rand have a larger number of centers in operation than does RCA at the present time. However, last fall, RCA announced plans to develop centers on a widespread scale, and since that time has opened fully equipped data centers at a faster rate than its competitors.)

"The combination of computers and staff personnel will make full-scale electronic data processing available to Chicago firms without the expense and worries of personnel recruitment, training, programming, systems maintenance, or preparation of computer site," Oderizzi continued. "RCA will have the facilities and the personnel to perform these services."

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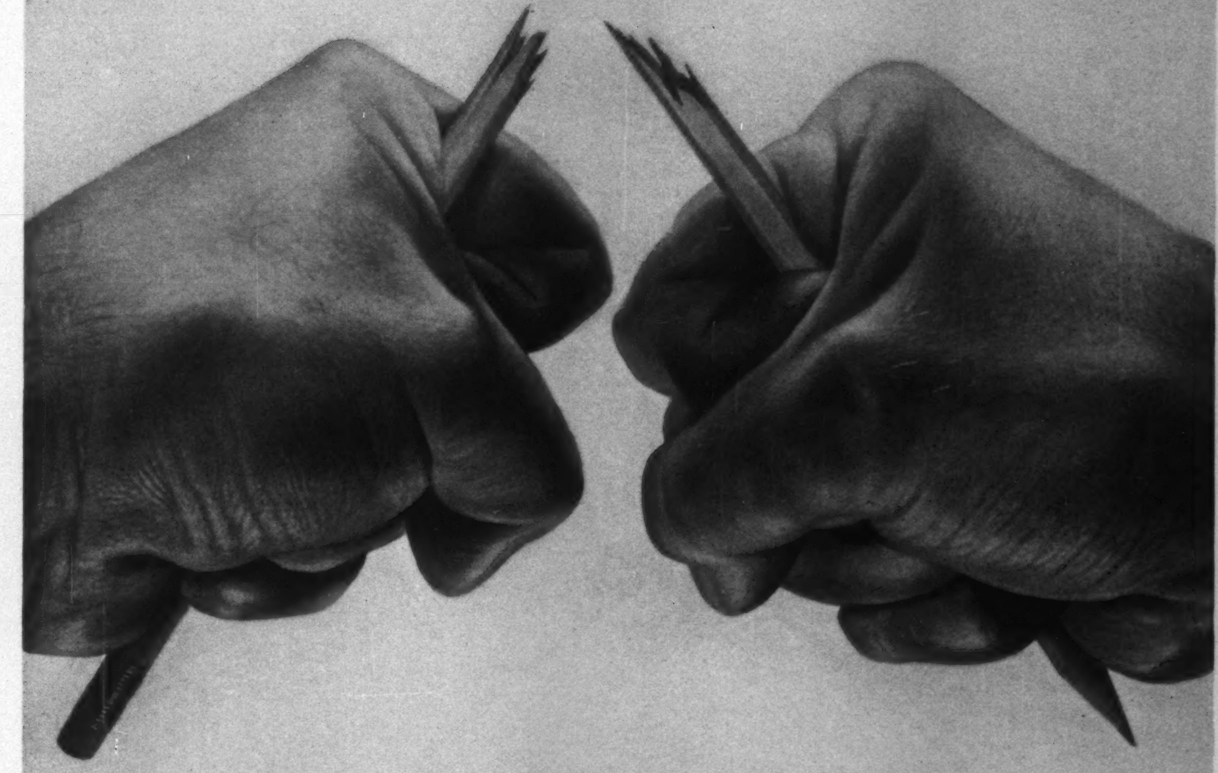

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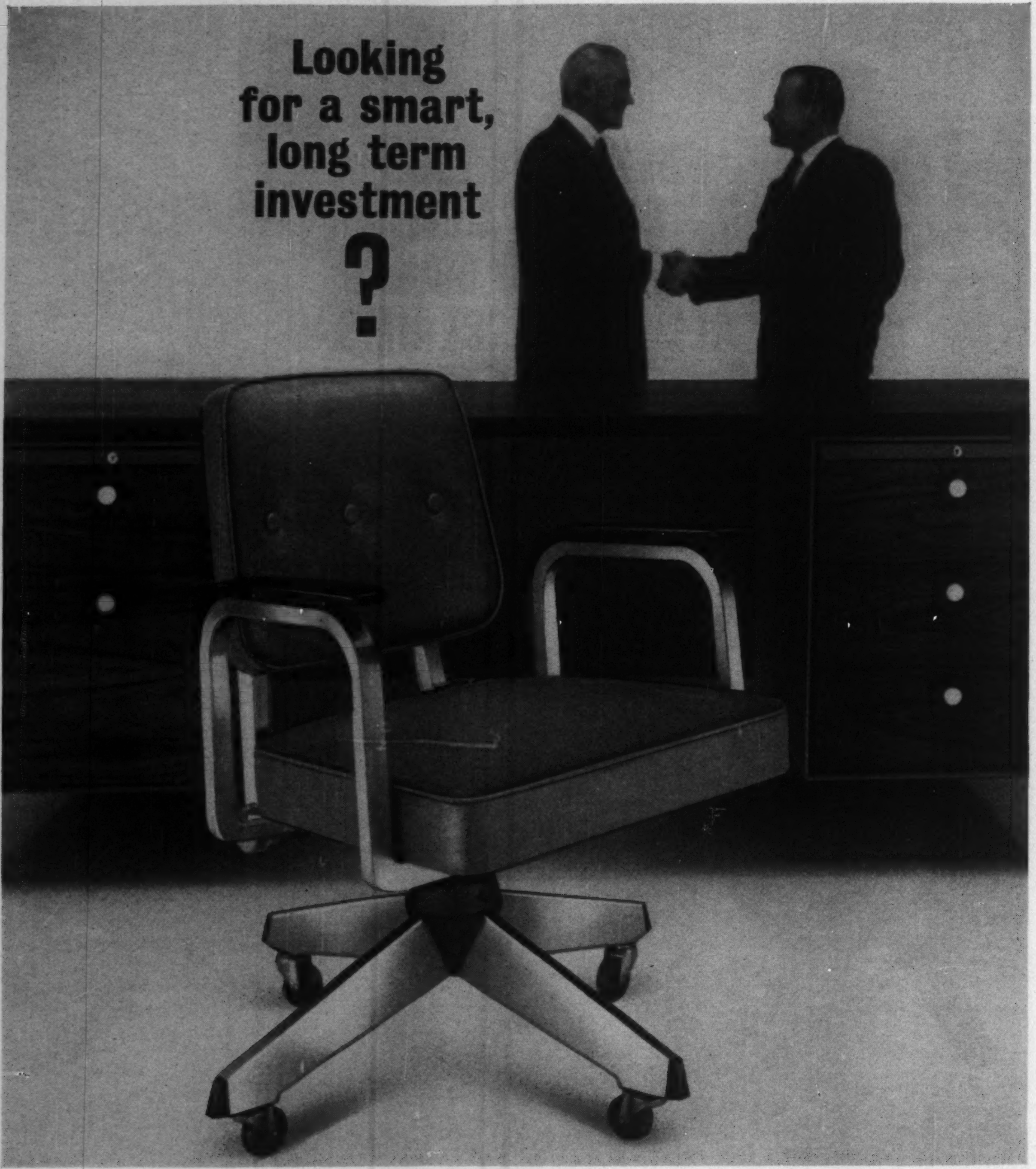

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OFFICE DESIGN

"ELEGANT SIMPLICITY" KEYNOTES EXECUTIVE SUITE OF THE SIXTIES

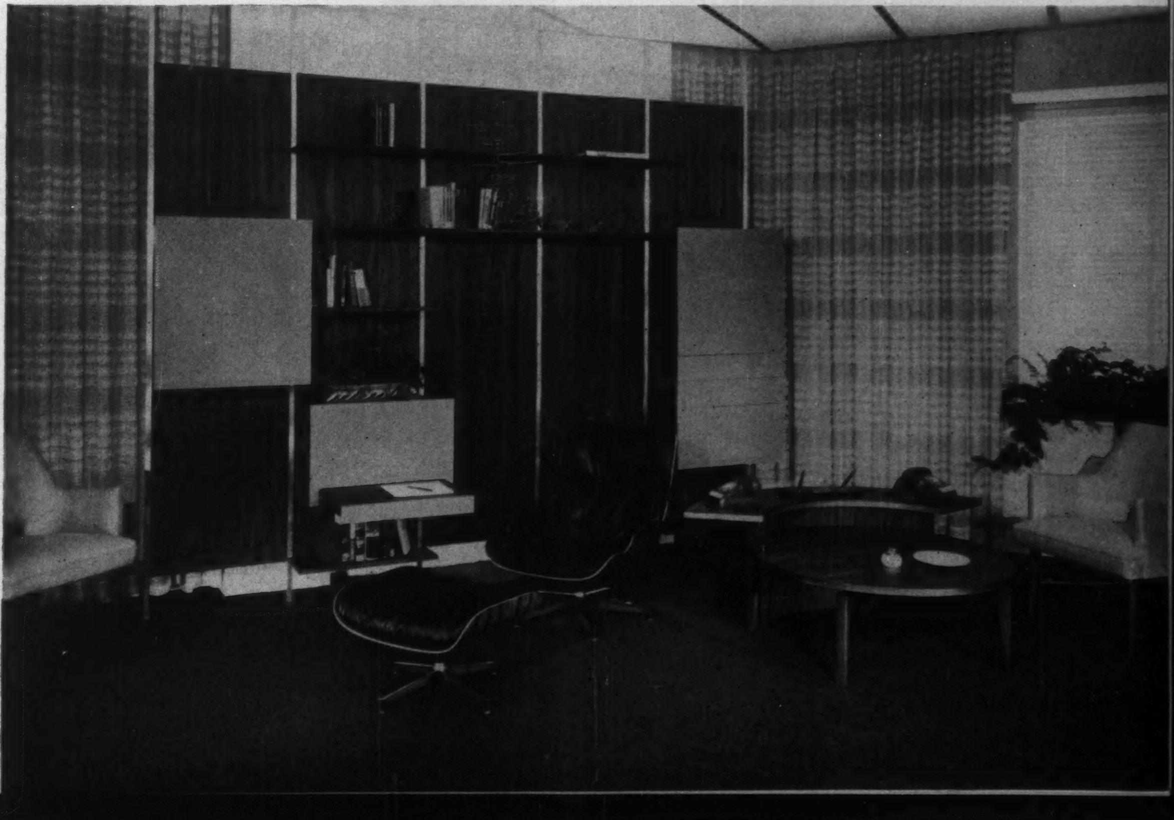
By JOHN ALLAN RHEA

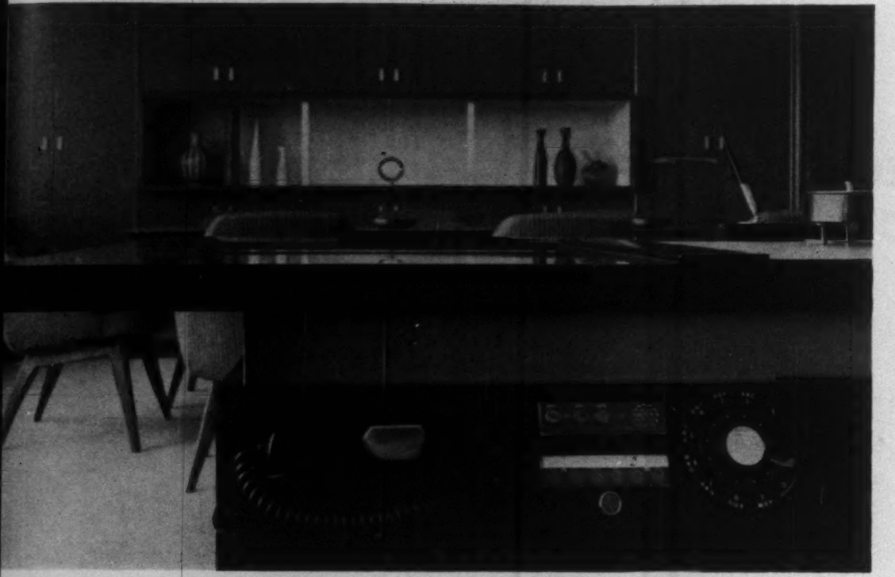
TWO WORDS describe the executive office of the sixties: "elegant simplicity." The trend in office design is away from the Spartan simplicity of the post-war era and toward a tasteful luxuriance that reflects the general affluence of American society, particularly the business climate in which higher profits are common.

Accompanying this trend is a decline in the spectacular innovations that completely changed the office during the early fifties. Air conditioning, modular furniture, electronic office equipment, uncluttered design, and effective utilization of space are all commonplace. No comparably revolutionary ideas are being introduced into the office today. The brass spittoon is out, the Picasso print is in, and life along mahogany row is back to normal.

Just as the office is the microcosm of the business community, the executive office is the nerve center of the office area. It is in the executive office that design trends first appear. Consequently,

The paradox of this "deskless office" is that it was designed by Desks, Inc.





it is significant that the executive office is undergoing the least change of any physical feature of business. Office design in the sixties is expected to continue this trend toward improving existing products and principles rather than developing new ones.

Air conditioning is an example of this refining process. Technology made air conditioning feasible for many offices after World War II. Although these primitive units were ugly, unreliable, and noisy, they wrought great changes in the office. The company with air conditioning had its pick of office workers and could pay lower salaries. The novelty has worn off now that air conditioning is used so widely, but manufacturers are

Replacing the massive desk as the symbol of executive status is the complex communications device (above). Metal furniture, such as the prototype steel executive desk by U. S. Steel shown below, is making inroads into top management offices.

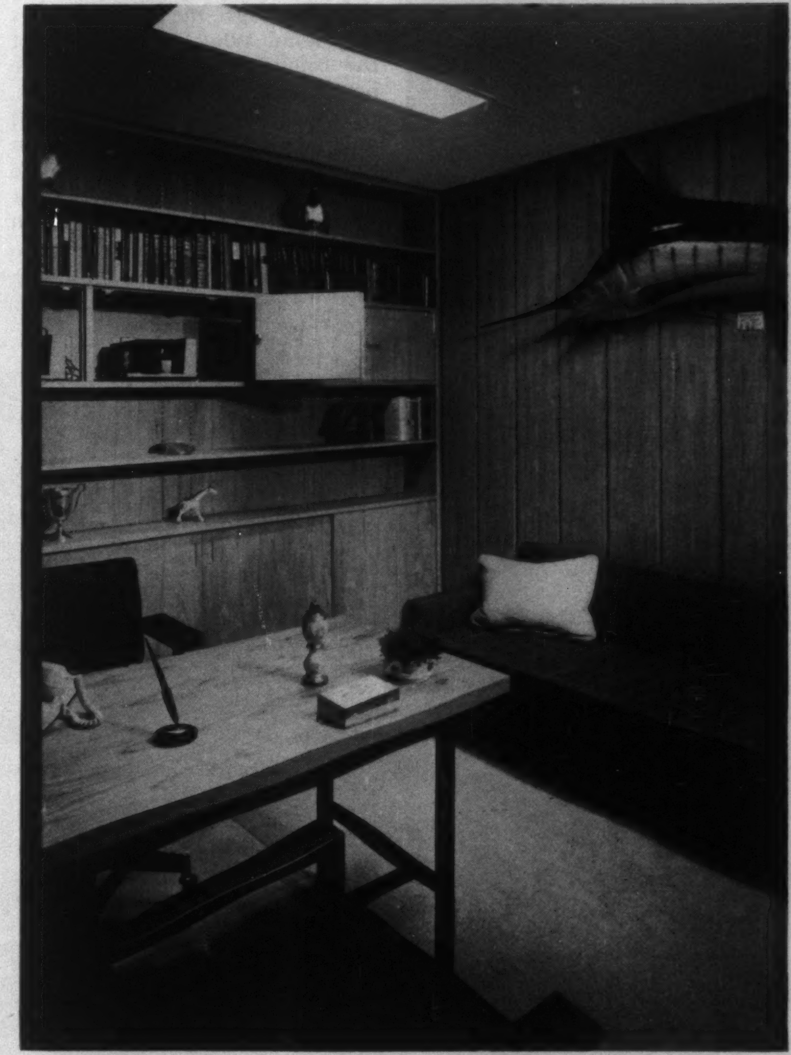
Executive offices reflect their occupants' work methods: President Truman found the paraphernalia on his desk no obstacle to efficiency; President Eisenhower is a "clean desk" man.

still developing more aesthetic and efficient units.

The quest for elegant simplicity is borne out by the fact that offices are buying better and more expensive furniture than ever before. This trend was revealed in a survey undertaken for *Office Management and American Business* by the D'Orsey Hurst business research firm. The survey also shows that purchases of furniture by offices are growing at a rate of about 8 per cent a year and that manufacturers' shipments are expected to reach $400 million in 1960. Of this total, $325 million, or about 80 per cent, represents metal furniture. The balance is wood.

The sales growth of desks and chairs, which make up more than half of the $400 million volume, is even greater than that of office furniture as a whole. Metal desk sales have been advancing at an annual pace of about 11 per cent, measured in dollar terms, and for wood desks the figure is 9 per cent. Demand for chairs shows a similar pattern: 15 per cent and 7 per cent a year for metal and wood chairs, respectively. Almost half of all these sales gains can be attributed to the buying of better grades of furniture for office use. This development is strongest in wood furniture.

Also bolstering the trend toward luxury is the increasing use of richer, warmer materials in the office. While these materials need not be more expensive, they sometimes increase the cost of main-



The executive's image of himself is as important as the "company image." This den in office of William T. Brady, chairman of Corn Products, reflects his interest in outdoor sports. The 150-foot-square area was designed by architect J. Gordon Carr.

Wood vs. metal for offices

tenance. A desk top, for example, can be made of wood, formica, or marble—all at a cost of about five dollars a square foot. Yet, formica will be easier to clean but will look artificial and be colder to the touch. By contrast, plastic coated fabrics are often used on walls where striking beauty is desired. Although these fabrics are more expensive, they permit savings on painting and cleaning, and eliminate the nuisance of periodic repainting.

Many companies are willing to pay the price for more expensive furnishings and costly maintenance in order to get the kind of offices they want. Why not put some of the company earnings into office improvement, management reasons, since otherwise the government will only take a healthy cut of them in the form of taxes? In addition, more workers are becoming available for maintenance jobs as automation displaces unskilled factory employees. Labor costs are still high, however, even for maintenance.

An interesting sidelight to the subject of office design is the fluctuation in color preferences. Orange had been the big favorite until this year, according to William Raiser, head of the interior design division at Raymond Loewy Associates, New York. But blues and greens took over in 1960, and it's anybody's guess what next year's fad will be.

No discussion of top management offices would be complete without some examination of the conflict that is raging between wood and metal furniture for supremacy in executive suites across the country. Wood is clearly the frontrunner, but metal may prove to be the tortoise that no one thought could catch the swift, hare-like wood furniture. Metal desks are making their appearance in executive offices where the general office decor—walls, doors, and furnishings—is predominately metal. In addition, more metal is being used than ever before in the interior construction

Executive suite (above) is at "Office of the Year" winner, International Minerals, Skokie, Ill.

Handsome aluminum desk, a product of Kaiser Aluminum Co., may presage more metal furniture for hitherto wood-dominated executive offices.

Executive office furnished in walnut at Chelmont State Bank, El Paso, Tex.

Furniture is by Jens Risom Design at executive offices of Berkshire Knitting Mills, Merchandise Mart, Chicago.

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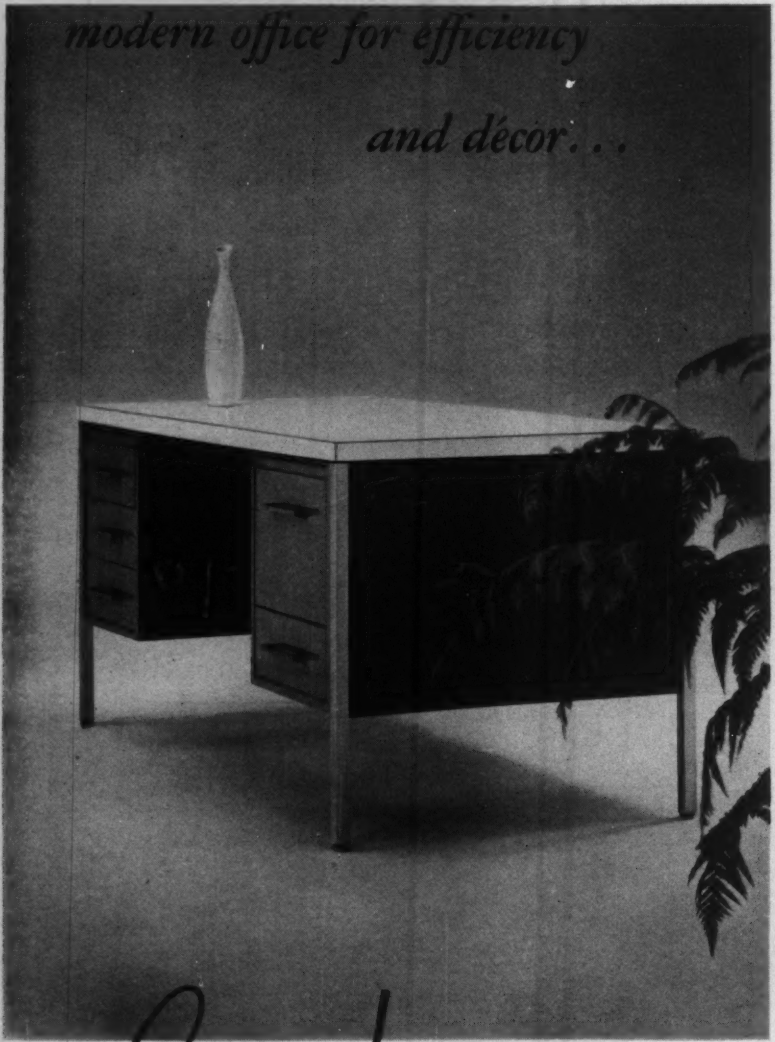

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of furniture for top management. Drawers that don't stick are just one application.

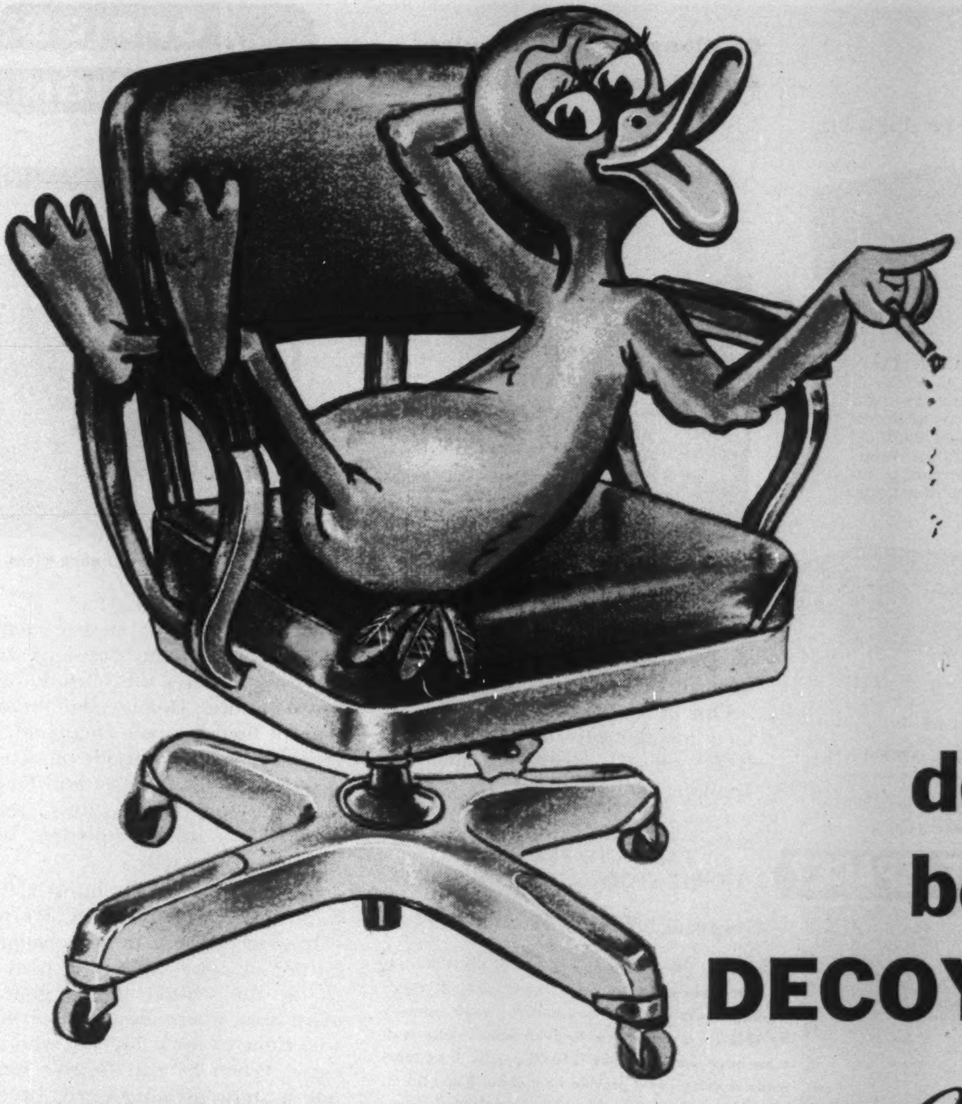
Another development that favors metal is the policy of more companies to buy the same line of furniture for use throughout the office. This furniture usually has a high percentage of metal parts. Thus, while the president and the stenographer have the same basic desks, the difference between the two pieces of furniture lies in the legs, surface materials, tops, colors, hardwares, and, of course, the sizes. At least one company—Globe Wernicke with its Echelon series—makes such a line.

This system saves money on both the initial purchase and the replacement of office furniture. But it fails unless it can overcome the ingrained executive obsession for custom-designed wood furniture as a symbol of status.

To promote the use of metal office furniture, U. S. Steel Corporation last week unveiled prototypes of steel executive desks, seating units, and conference table designed by Peter Muller-Munk and Associates. Desks consist of a metal frame covered with wood so that they each become a "box within a box." Between the two materials a layer of urethane foam plastic under pressure gives added rigidity and absorbs sound. While this furniture is not in production, U. S. Steel is showing it to demonstrate that steel furniture has beauty as well as strength.

Despite all the activity in the metal furniture field, however, several office designers believe that metal desks will be limited to the general office area and the presidents' offices of steel companies and metal desk manufacturers. They point out that metal cannot match the universal appeal of wood's warmth and individuality. For these reasons, they maintain that top management will always keep the wood desk.

Of equal importance to the wood-metal controversy is the question of private offices *vs.* the open office



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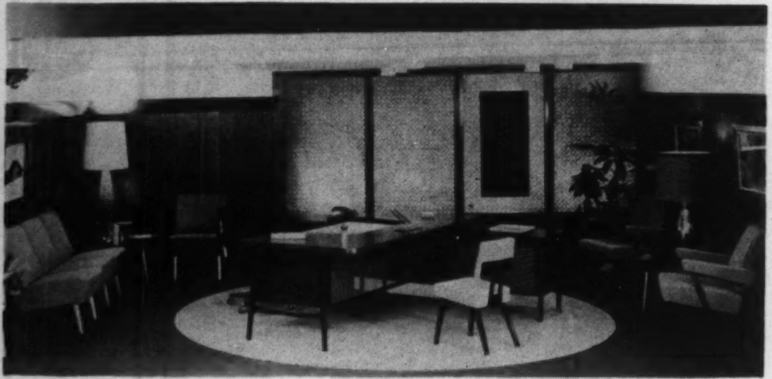
Challenging jobs require solitude of private office



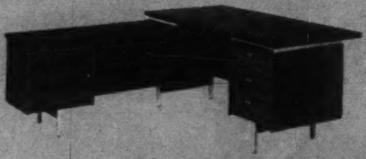
General Fireproofing's "Italic Styling" line adapts to all levels of management.

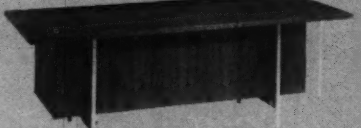
area. There are as many opinions on this subject as there are office managers and interior designers.

One of the most articulate spokesmen for the private office faction is Gerald Luss, chief designer of Designs for Business, Inc., New York. He argues that management's first job is making decisions and that this requires the solitude of a private office. Despite the "team" concept used by some companies in getting together to decide on action (perhaps so that no one will be responsible for the decision), most capable executives function best without distraction.

The office manager himself is a good example of the need for private offices created by the changing nature of office work. He used to sit in the center of the general office area where he could observe who came to work late and who left early. When he had to give someone a stern dressing-down, he did it in front of the entire office because it was thought that this was good for morale and kept everyone on his toes. Many office managers have shed these mundane tasks, and today they sit in their private offices where they can concentrate on the much more difficult decisions generated by their increased responsibilities.

The eventual development of the private office, according to Luss, will be the disappearance of the desk. As automation frees all levels of management from the drudgery of pencil work and replaces it with the more challenging tasks of problem solving, the "deskless office" will become ubiquitous. In the future, the executive's office will need only a lounge area where he can





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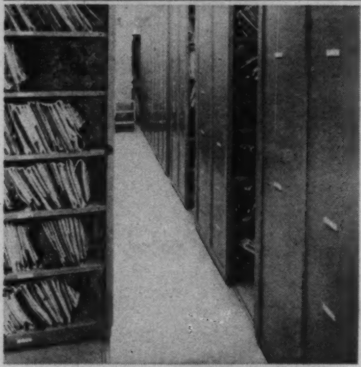

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This active factory stock parts area containing 25,000 different parts, originally occupied 24,000 sq. ft. of space in two separate areas with separate personnel. By conversion to the Dolin Mobile Storage System, the same area now requires only 11,000 sq. ft.—a 54% reduction of valuable space now used for other productive uses. Both areas were combined into one area. In addition to space savings, worker fatigue has decreased since travel time between bins is 1/3 less. The cost of this large installation will pay for itself within three years.

FREE LAYOUT AND SURVEY

WRITE FOR ILLUSTRATED 8 PP. CATALOG OF MOBILE STORAGE "IDEAS"

MOBILE STORAGE DIV.
DOLIN METAL PRODUCTS, INC.
DEPT. NSOM 315 LEXINGTON AVE., BROOKLYN 16, N. Y.

(Circle No. 35 on Reader Inquiry Card)

"Hello, Y&E?
I'd like to order
a new office..."

From here on, our new Y&E Decorator and Design staff takes over the tremendous planning and shopping job.

Guiding in on your tastes and budget, we go to work and draw up a plan of your new working environment for your approval.

Colors and fabrics are coordinated. Exclusive rugs, drapes, desks, files, furniture—even lamps and knickknacks—are all our responsibility. You don't lift a finger.

You save the time-consuming bother of shopping around in many places and dealing with an army of individual suppliers, who may not understand work flow and office layout. Yet, with Y&E, you don't miss a decorating trick.

Our 80 years of experience in the design and manufacture of office equipment makes sure your office will be efficient as well as beautiful.

Your first step towards this smart new office is to phone your local Y&E representative and ask him about it. He's located wherever you are. Or, if you prefer, drop us a note. There's no obligation, of course.

YAWMAN & ERBE

A STERLING PRECISION CORPORATION

1003 Jay Street, Rochester 3, N. Y.

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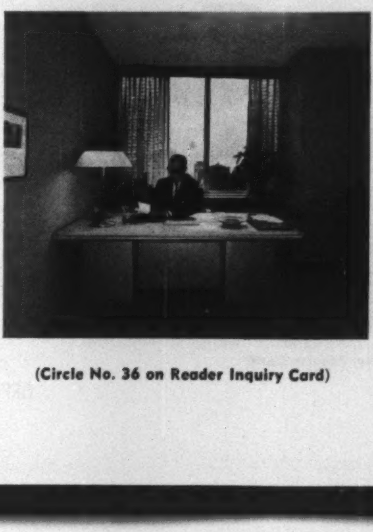

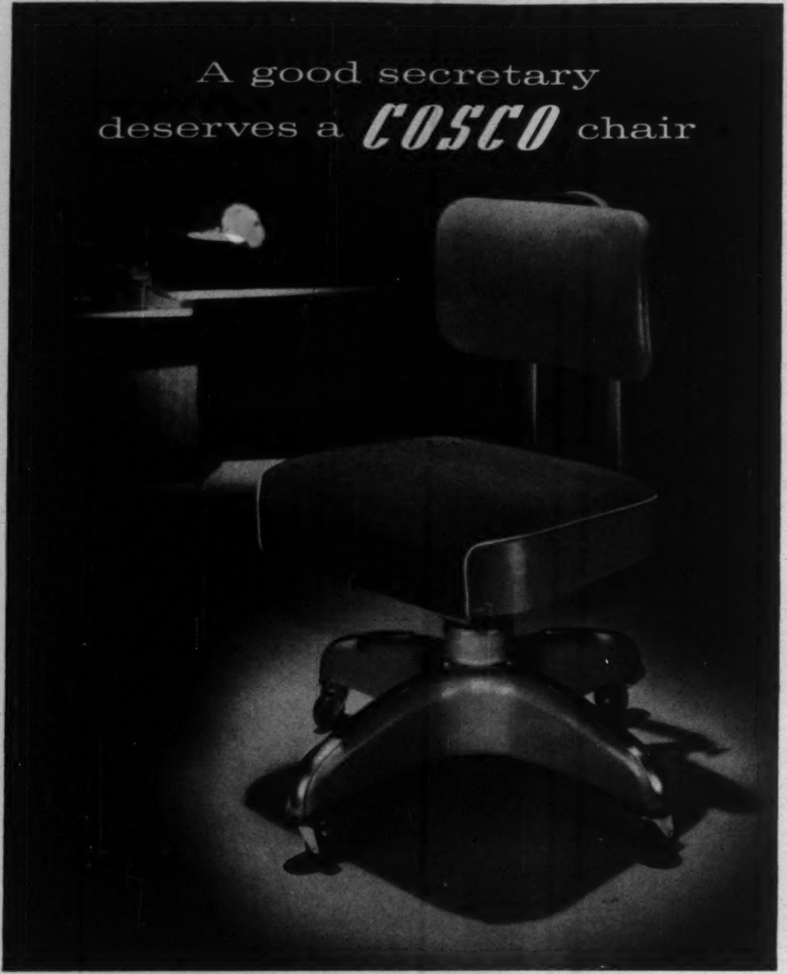

COSCO® "Office fashioned" chairs

● *It costs surprisingly little* to make her valuable work a pleasure with this Cosco chair. She'll appreciate the generous proportions . . . the luxurious upholstery . . . the handsome styling. Completely adjustable for posture perfect seating, too! Seat of dual-contour molded foam rubber. Backrest foam-cushioned, upholstered front and back.

Ask your Cosco dealer for a free 10-day trial in your office. A Cosco chair's a fine way to say "job well done."

Find your COSCO Office Furniture dealer in yellow pages of phone book, or attach coupon to your letterhead.

Model 25-S as illustrated with combination upholstery
$45 95
($49.95 in Zone 2)

Model 25-S with all-Naugahyde upholstery, $42.95 ($46.95 in Zone 2).

Model 27-LA Conference Arm Chair $39.95* ($43.95 in Zone 2)

Model 28-TA Executive Chair $59.95* ($63.95 in Zone 2)

HAMILTON COSCO, INC., Dept. OM-106, Columbus, Indiana

Write us for complete information on Cosco office furniture and new full-color catalog, or phone your nearby Cosco dealer listed in yellow pages.

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Also available in Canada, Alaska and Hawaii through authorized COSCO dealers.

*Models 27-LA and 28-TA are priced with all-Naugahyde upholstery, Zone 2: Texas and 11 western states.

(Circle No. 37 on Reader Inquiry Card)

meet informally with his associates and subordinates. Top management already has this arrangement; middle management is getting it.

During the transition to the "deskless office," small work tables are filling these needs. These tables are available in a number of sizes and shapes, but the round table is the most popular because of its convenience for meetings. It stimulates the informal atmosphere that has become part of the much-vaunted "democratization of human relations in business."

Also pertinent to the question of private offices are their space requirements. Several office designers privately admit that only about 75 square feet are actually essential as a work area. The other 100 to 300 square feet only satisfy the executive's desire for prestige.

This excess space is bound to be eaten away as electronic machines crowd the general office area. Since space planners necessarily must lay out the general office area first, the result is a slight trend toward smaller executive offices. Another factor working to diminish the size of private offices is the high rental cost of office space in metropolitan areas.

But rigidity in planning office space for efficiency can often destroy this objective, according to office designer Sydney G. Rodgers. He points out that in the placement of the water cooler, efficiency would dictate a spot that is the shortest distance from all desks in the area it serves. But a trip to the water cooler is a necessary seventh-inning stretch, and the office worker needs the mental relaxation of a short stroll.

Of more vital concern to the design of the executive office is the necessity of adapting the entire office to the man who uses it. Yet, too many companies try to fit the man to the office. Designers repeatedly have warned that there is no one way to furnish the private office—any more than there is one way for the executive to use it. The office must fit the man just as, in Gilbert and Sullivan's *The Mikado,* "The punishment must fit the crime." The example of the nation's two top executives of recent years — Presidents Truman and Eisenhower — illustrates this point. The former worked efficiently at a littered desk; the latter found the clean desk approach best suited to his needs.

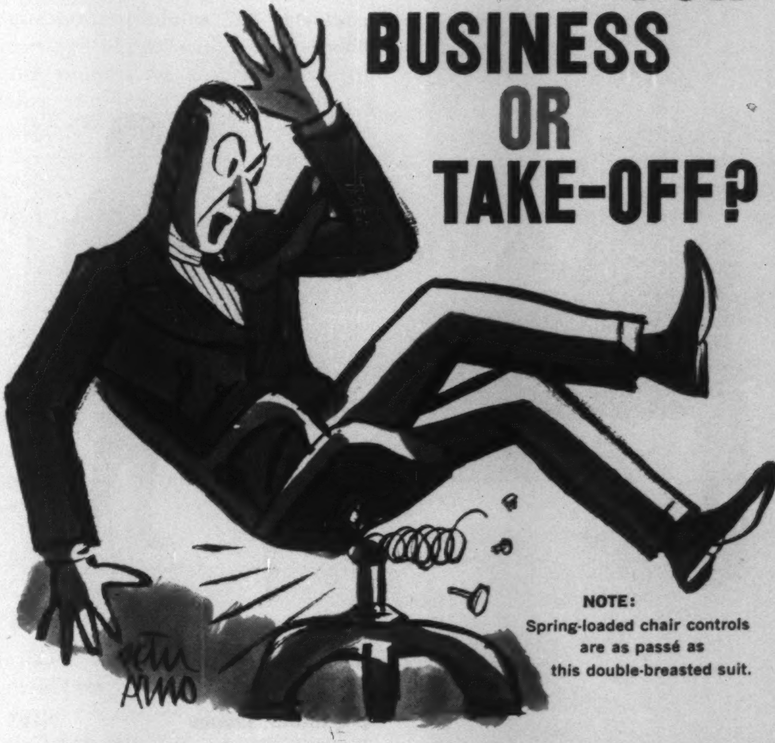
Individuality is limited

The primary factor to be considered in designing an office for the executive is the way he works. He cannot work efficiently unless he has all the equipment he needs, arranged in a manner best suited to his methods. But the problem of adaptation does not stop there. It is also important to determine his tastes in furniture (contemporary or period) and color, as well as his personal habits. Accessories and objects for the walls can be selected on the basis of his personality and hobbies. If he is a hunter, for example, a stuffed moose head need not look out of place even in the most streamlined offices. Much has been heard of the "company image," but many designers attach equal importance to the individual's own image of himself in furnishing his office.

Yet, there is a limit to the amount of individuality permitted in the executive office. This limit varies with the company and even with the industry. As a rule, most companies prefer that executives at the same level have the same type of desks, chairs, and cabinets, and the same size office. Most of these companies permit a good deal of latitude in the selection of such accessories as pictures, ash trays, lamps, color schemes, and treatment of windows. Some of the accessories that have won favor recently are complex communications devices, motion picture screens, and map cases. Bars and television sets are usually confined to the executive offices of advertising agencies.

The executive office is indeed changing. While these changes are not dramatic, they are important. They promise greater efficiency, comfort, and prestige. Keeping up with these needs of the future is an important task for the progressive office of today.

POISED FOR BUSINESS OR TAKE-OFF?



NOTE:
Spring-loaded chair controls are as passé as this double-breasted suit.

Special-steel torsion bar that can't even be seen from most positions replaces unsightly coil springs, gives superior tilt performance.

One business hazard you don't have to put up with any longer is the coil-spring tilt mechanism in your executive swivel chair.

In one stroke, the Bassick Flo-Tork chair control has abolished all the old tilt-chair bugaboos: springs, squeaks, squirms, and spine-jarring sudden stops at the end of tilting travel.

And a Flo-Tork equipped chair is so simple, clean-looking, smooth-acting . . . and comfortable . . . that you really have to see it and try it to appreciate it.

No unsightly, unsafe, protruding springs — Streamlined Flo-Tork replaces bulky, ugly coil spring with compact, lightweight, effective torsion bar—so unobtrusive that only *results* let you know it's there.

No squeaks, no oiling required — Silent Flo-Tork has nylon bearings to take care of that. No metal-to-metal contact in this tilt mechanism.

No squirms — Easy Flo-Tork side adjustment lets you adapt to your weight while sitting normally upright—no stoops, no bends, no getting down on the floor or turning chair upside down.

No jars — Flo-Tork brakes you to a gentle stop at end of travel with a natural cushioning action.

Office managers: Make sure your next tilting office chairs are equipped with Bassick Flo-Tork — the only modern chair-tilt control. O.28

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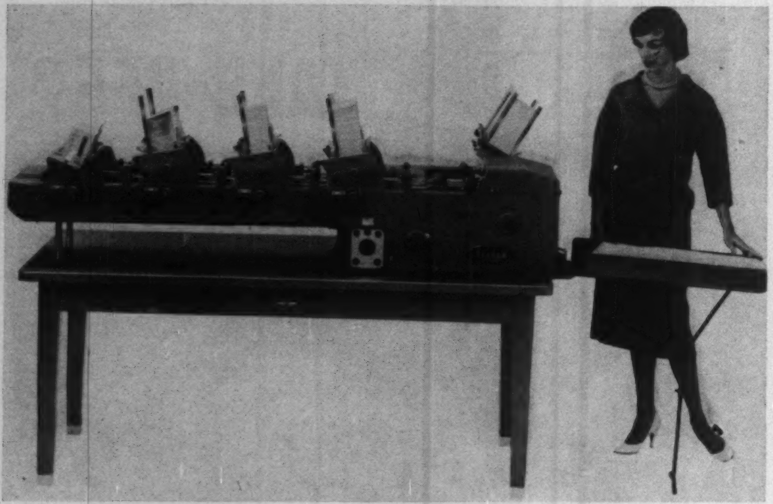
(Circle No. 38 on Reader Inquiry Card)

NEW SYSTEMS AND EQUIPMENT



◀ Mail inserter N-12

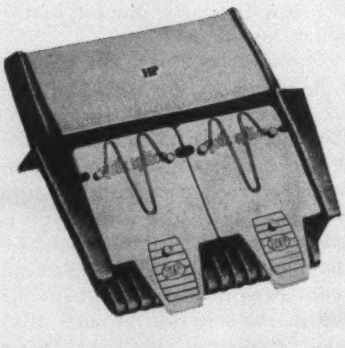
A new model of the Friden-Ertma mail inserter can gather and insert as many as eight pieces in envelopes as large as 9 5/8 inches in length and 6 3/8 inches in depth, or as small as 3 3/16 inches in length and depth. The four-station model shown here automatically gathers, inserts, seals, counts, and stacks the envelopes, ready for mailing. The model is available with one to eight inserting stations, and special stations for punched cards and open feeding. Friden, Inc., San Leandro, Cal.

◀ Contour lounge N-13

The Select-A-Rest contour lounge uses a single hydraulic cylinder powered by a one-third horsepower electric motor to raise head and feet to positions desired. The lounge is available in frame and upholstery styles of Italian Provincial (shown here), French Provincial, Early American, and Swedish Modern. When not in contour position the lounge appears as conventional furniture. Dura Corporation, 21800 Greenfield Rd., Oak Park 37, Mich.

◀ Printing calculator N-14

The Totalia model 8381 printing calculator adds, subtracts, multiplies, and divides automatically. The unit is also equipped with a percentage figuring device, a point setting device allowing the decimal point to be pre-set, automatic reinscription of the total, red printing of only negative values, and numerous other features. Lagomarsino, 4131 White Plains Rd., New York.



▲ Microfilm splicer N-15

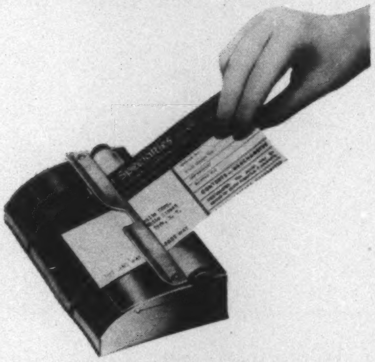
This 35 mm microfilm splicer uses a pre-cut, adhesive-coated Mylar tape to form a transparent, permanent butt-type splice. The splicing tape is said to remain flexible and optically clear in operation. The HPI splicer is constructed of die cast aluminum with stainless steel cutting blades and film alignment pins. The unit also has a tape storage compartment with a hinged cover. Hudson Photographic Industries, Inc., Irvington-on-Hudson, N. Y.

◀ Message recorder N-16

A permanent record of incoming calls can be kept with the Telephone Message Book. A plastic spiral binder with imitation leatherette cover contains 400 perforated message blanks with a corresponding number of unperforated full sheet duplicates that remain in the binder. Cromwell Business Forms, Albany 1, N. Y.

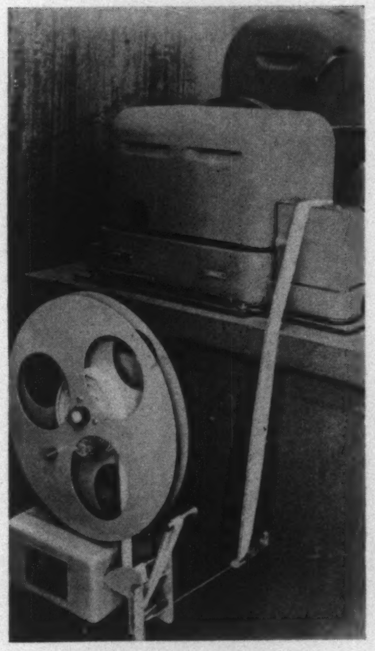
▶ Paper shredder N-17

A paper shredder with case-hardened steel knives driven by a one-third horsepower motor through fiber gears and rubber belts, shreds paper into ¼-inch strips. Up to 100 sheets of paper, cards, etc., can be stacked into a hopper for automatic feeding. Clips and pins are sliced without damage to the cutter, according to the manufacturer, Industrial Shredder & Cutter Co., Salem, Ohio.



◀ Label moistener N-18

The Model S gummed label moistener with wick roller action applies water to labels up to 5¾ inches in size without removing the glue. A chromium guide is adjustable to any thickness of paper. Rubber tabs on the bottom prevent the device from marring desk or table tops. Glue-Fast Equipment Co., 11 White St., New York 13.



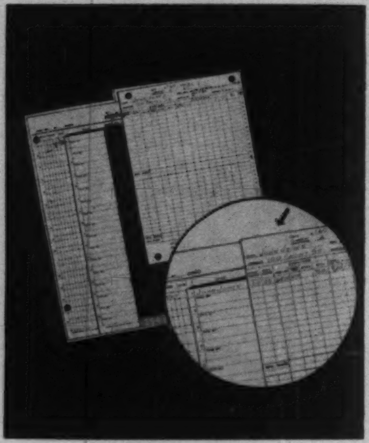
◀ Tape winder N-19

Tape from teletypewriter equipment is automatically wound on a 12-inch metallic reel with a capacity of 1,300 feet of chadless and up to 2,000 feet of fully perforated tape. The reel is magnetically held to rotating frame for easy snap-off removal; reel posts are changeable to handle different widths or levels of tape. Winding tension is adjustable to maximum tightness without tearing the tape, and a safety device opens a mercury switch to cut off motor power when the tape becomes too taut. When the tape is slackened, the tape automatically begins winding. Western Apparatus Co., Div. of Comptometer Corp., 5600 Jarvis Ave., Chicago 48.

▲ Six-part form N-20

A multi-copy continuous form, called Stub-Flo, is designed for use with data processing equipment and typewriters, with or without sprocket-fed attachments. A six-part form is possible with Stub-Flo, according to the company, due to a manufacturing process that glues the margin of the form. Thus, sheets of different sizes can be used in one form set. The interleaved carbons are perforated and the special design is said to prevent a tenting of forms as they leave the machine. Hamilton Autographic Register Co., Hamilton, Ohio.

NEW SYSTEMS AND EQUIPMENT

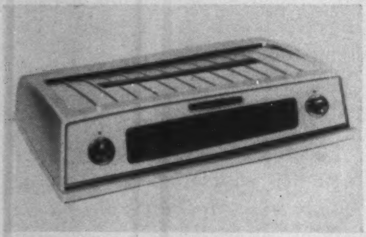


▲ Adding machine N-25

A full-featured, ten-key adding machine made by General-Gilbert Corp., and distributed exclusively by SCM, is available in three models: the E66, E78, and E99, with list prices of $129.50, $159.50, and $189.50, respectively. Each model performs addition, multiplication, and subtraction automatically with electrically activated keys and controls. Automatic subtraction and repeat controls for division are featured on the E99 model shown here. Smith-Corona Marchant, Inc., Syracuse 1, N. Y.

◀ Payroll system N-21

Complete records for 16 employees for one year can be maintained with P.B.F. Jr., multiple payroll system. One such system contains 53 pre-assembled units of journal sheets, earnings statements and carbons, and 35 employee earnings, cards, allowing for over 100 per cent turnover of employees. One set of P.B.F. Jr., multiple writing system (a year's supply for 16 employees), retails for $11.95. Providence Business Forms Co., 188 Benefit St., Providence, R.I.

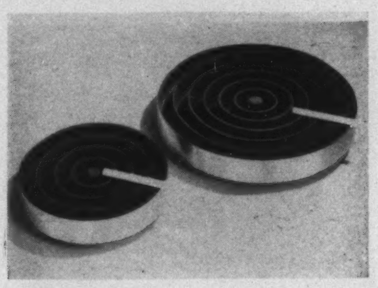


▲ Photocopier N-23

The model 300 photocopier features Flo-Tronic Control, a device by which the exact amount of developer is distributed from cartridge to tray at the flick of a switch. The same switch can circulate the developer back to the cartridge when not in use. The unit is 23 inches wide, 14 inches deep, and 5¼ inches high. It is said to reproduce marks made in all colors, pencil or crayon notations, ink signatures, etc. Cormac Photocopy Corp., 80 Fifth Ave., New York 11.

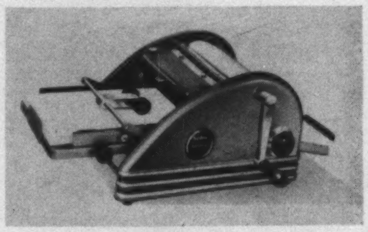
▶ Telephone rest N-26

The Phone Booth Jr., is designed to keep phoning needs at fingertip convenience by combining a phone rest, phone book compartment and pen or pencil holders. Made of heavy, styrene plastic, the unit is available in white, black, grey, and beige. Valley Bolt Co., Davenport, Iowa.



▲ Ash tray N-22

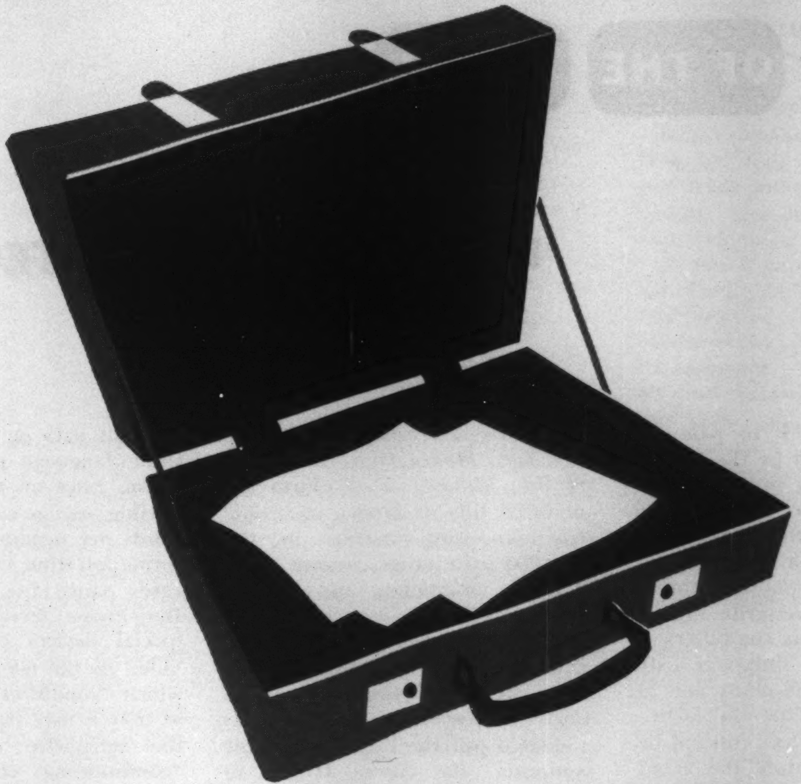
The Circletron ash tray is constructed of one-piece aluminum with satin-finish exterior and steel-gray, stain-proof interior. Concentric circles are of decreasing height from outside rim to center to keep cigarettes from falling off the tray; cigarettes fall into rings and are self-extinguished upon reaching a "butt-size." Maison Gourmet, Ltd., 1170 Broadway, New York 1.



▲ Spirit duplicator N-24

The model 440 Geha spirit duplicator features roller moistening, automatic paper feed, hairline printing, and silent operation. A control knob varies the pressure as required. The model 440 also features multicolor printing in one operation. Milo Harding Co., 162 Tempo Bldg., Monterey Park, Calif.

See also the section of new products to be displayed at the National Business Show on pages 48 and 49.



Today's low-cost way to automate your job costing is with Keysort Data Processing

For strict job costing controls at every stage of operation—for any number of up-to-the-minute management reports in such areas as inventory, order and sales analysis, labor costing—Keysort is the data processing system to use.

The reasons are many. No restrictive procedures; minimum training; remarkable economy; simplicity of installation and operation.

Keysort, in fact, is the only automated data processing system flexible enough to fit your business as it stands *and* as it grows. It is the one system adaptable and affordable to companies of every size.

With Keysort you use punched cards—mechanically created for fast, easy sorting. Figures are automatically tabulated and results summarized direct to reports without transcribing.

Result: Keysort automates your data processing to give you the meaningful on-time information you need for complete control of your business and profits. Monthly, weekly, daily. And at truly low cost.

Your nearby Royal McBee Data Processing Systems Representative has had a wealth of experience in solving management control problems. Working with you, with your systems and procedures experts, he can offer helpful advice about a low-cost Keysort system tailored to your individual requirements. Call him, or write us at Port Chester, N. Y.—indicating the applications in which you are interested—and we will be happy to send you actual case histories from our files.

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NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

(Circle No. 39 on Reader Inquiry Card)

EQUIPMENT FOR INTEGRATED

By MARY D. LYONS

IN AN ATTEMPT to pale the confusion produced by the phrase, "integrated data processing," it might be a good idea to begin with an explanation of the term.

Integrated data processing or "IDP," as it is commonly abbreviated, does *not* necessarily involve the use of electronic computers. It might be described simply as a system contrived to efficiently and logically save both time and labor.

Essentially, the basic concept behind "IDP" is simply the avoidance of repetition of work. If data is recorded once, there should be no necessity for a second recording of the same information.

This, of course, is no new premise. It has been used in offices for many years. A typist who uses a carbon paper to make a second copy of the letter she is typing is making use of the principle of IDP.

Today, though, automation is employed in most integrated data processing systems, and the trend has enjoyed a rapid and exciting growth.

The Manufacturers

Addressograph-Multigraph Corp., 1200 Babbitt Rd., Cleveland 17. Multilith Offset Model 1278 is almost completely automated unit for magnetic ink character encoding, serially numbering, and personalizing bank checks; Addressograph Model 9302 Scanning Punch automatically scans bar code and punches tabulating cards; Graphotype Class 6700 operates automatically from common language perforated tape; Transfer Printed Model 831 is unit which is able to pick an item at a time from vertically listed form, and reproduce this item on individual cards, envelopes, and similar unit forms.

Airborne Instruments Laboratory, Inc., Modca Div., Old Country Rd., Mineola, N. Y. Firm has produced line of Modac electronic data processing systems in the $100,000 price range, custom built, including computers and card-to-tape converters.

Alwac Computer Division, 13040 S. Cerise Ave., Hawthorne, Calif. Company was previously known as Logistics Research, Inc., and offers a general purpose digital electronic computer, the Alwac III E, in $100,000 price range.

American Telephone and Telegraph Co., 195 Broadway, New York 7. Data-Phone is a Bell System service which makes it possible to transmit data or text in any machine language over regular telephone lines at high speeds. The flexible system carries up to 1,600 words per minute and handles information from any medium such as cards, paper tape, or magnetic tape. Data-Phone service makes use of special devices or "subsets," provided by the telephone companies, which "condition" the information so that it may be transmitted over the telephone connection. This "conditioning" consists of converting the electrical pulse of data received from originating equipment (card readers, tape readers, tabulaters, etc.) to audible tones for transmission over telephone lines.

The RASTAD system retrieves and displays, almost instantaneously, computer information stored on magnetic file drums without disrupting on-line operation of computer.

DATA PROCESSING

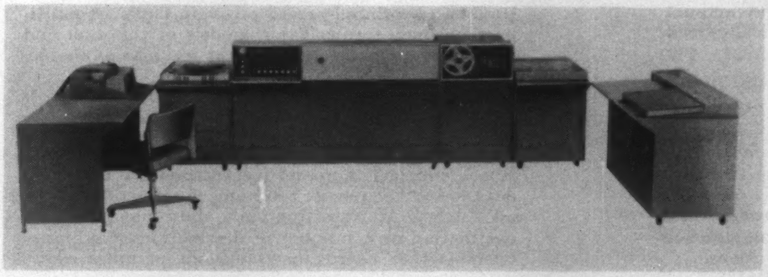
At the receiving end, the reverse of the function is performed. The equipment reconverts the tones into electrical impulses and delivers the data to business machines.

Ampex Data Products Co., Computer Products Div., 934 Charter St., Redwood City, Calif. Firm manufactures magnetic tape transport equipment, including heads and read/write/translator electronics for use as input/output devices in electronic computers and other specialized digital systems.

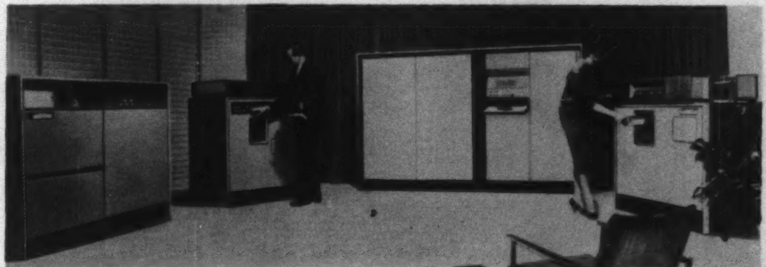
Anelex Corp., 150 Causeway St., Boston 14. Company manufactures a series of high speed printers for readout from data processing systems. They print from magnetic tape, punched paper tape or "on-line" from computers on any type business paper or form.

Two completely new series of high speed printers have just been announced that retain the proven features of earlier models, but at greatly reduced prices. Accent is on simple operation, easy accessibility and extreme reliability.

Two basic series are provided. One, the Series 4-1000-SD, offers normal printing rate of 1,000 lines per minute of alpha-numeric characters and 2,000 lines of numeric characters. The second, the Series 4-500-DD, (substantially lower in price) offers 500 lines per minute alpha-numeric and 1,000 lines per minute numeric. Normal length of line is 120 characters, although more or less can be supplied as needed.



The RPC-4000 transistorized general purpose digital electronic computer, from the Royal Precision Corp., can serve the processing needs of both science and business.



IBM's "Stretch" class computing systems like the one above can complete more than 75 billion arithmetic operations a day and operate faster than IBM 704.

Bell Telephone Laboratories, 463 West St., New York 14. Research and development work for the Bell System. (See listing under American Telephone & Telegraph Co.)

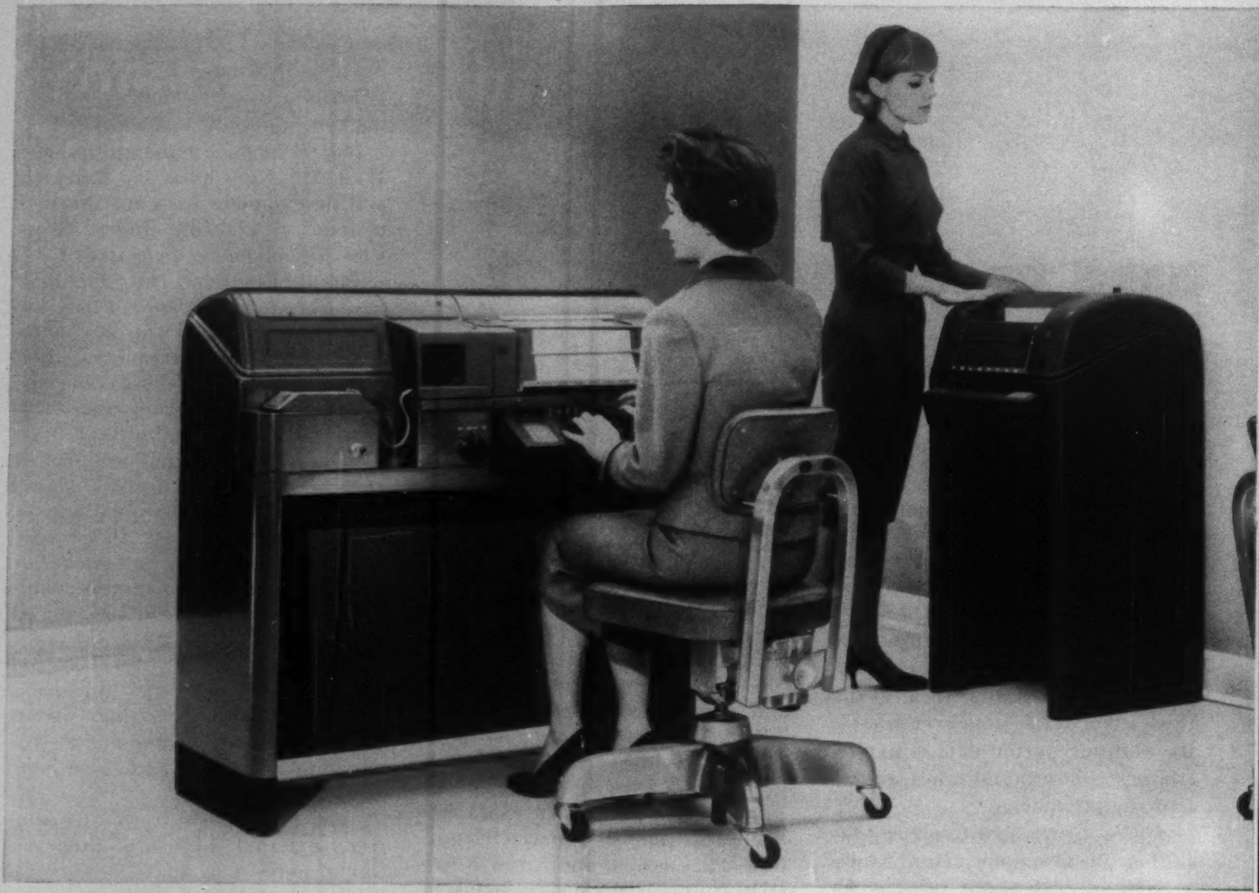
Bendix Computer Div., The Bendix Corp., 5630 Arbor Vitae St., Los Angeles 45. Firm has manufactured G-15 general purpose digital computer in the $50,000 class, designed for engineering and scientific work; also has business units using punched card and/or punched tape input. Special feature allows computation while input and/or output operations are in process. Alpha-numeric paper tape converter may be used for integration with systems using 5-, 6-, 7-, and 8-level codes.

Burroughs Corp., 6071 Second Avenue, Detroit 32. Burroughs Corp. offers three electronic digital computer systems: desk-size E 101, medium-scale 205, and intermediate-scale 220.

The E 101, which features simple, external pinboard programming, stores data on a 220-word capacity magnetic drum memory. Keyboard input may be augmented by 80-column cards and standard, commercial 5- and 8-channel paper tape. Output is to semi-ganged printer, with optional facility for paper tape.

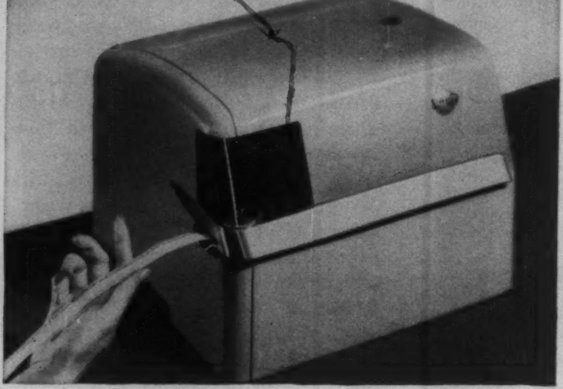
The Burroughs 205 is a medium-scale electronic data processing system. Input is through keyboard, punched cards, or perforated paper tape. Output is to electric typewriter, punched card, paper tape, or line printer. The general-purpose, decimal-digit 205 stores data and instruments on a 4,800-word magnetic drum. Auxiliary magnetic tape storage is available in up to 10-reel or multiple-tape Datafile units, in any combination. Maximum capacity of this magnetic tape storage system is 200 million digits. Applications for the 205 cover the complete range of commercial, engineering, and scientific computation problems. Purchase price for an average 205 system is around $250,000.

The Burroughs 220 is an integrated, general-purpose electronic data processing system featuring a



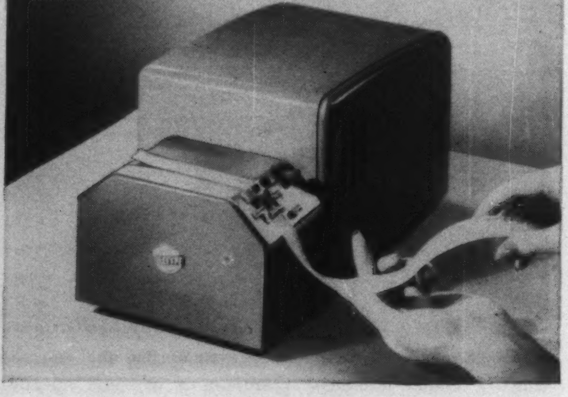
Teletype Model 28 Automatic Send-Receive Set A "complete station" in one console—with facilities for sending and receiving on message paper or sprocket-fed business forms . . . tape punching . . . sending or receiving with tape . . . integrating tape and manual keyboarding . . . producing tape automatically, as a by-product of send-receive operations.

Teletype Model 28 Tape Punch Receives incoming electrical signals, punches a 5-level "common language" tape, and prints data right on the tape, for easy identification and handling. Unit is used for message relaying . . . for integrating data from several sources into a single tape . . . for providing punched tape as a by-product of send-receive operations.



Teletype Model 28 Receive-Only Page Printer A message receiving unit (without keyboard). This is "terminal" equipment, for use where two-way communication is not necessary. No attendant is needed. Produces a printed record on plain paper or multipart business forms. Table models of this unit and the send-receive set at the right are also available.

Teletype Model 28 Tape Reader This is a sending unit. Reads punched tape and instantaneously transmits data to local or remote receiving equipment. As with all Teletype transmitting units, data may go to one destination or a number of destinations simultaneously—either nearby or thousands of miles away.



For your communications system . . .

TELETYPE Model 28 Line

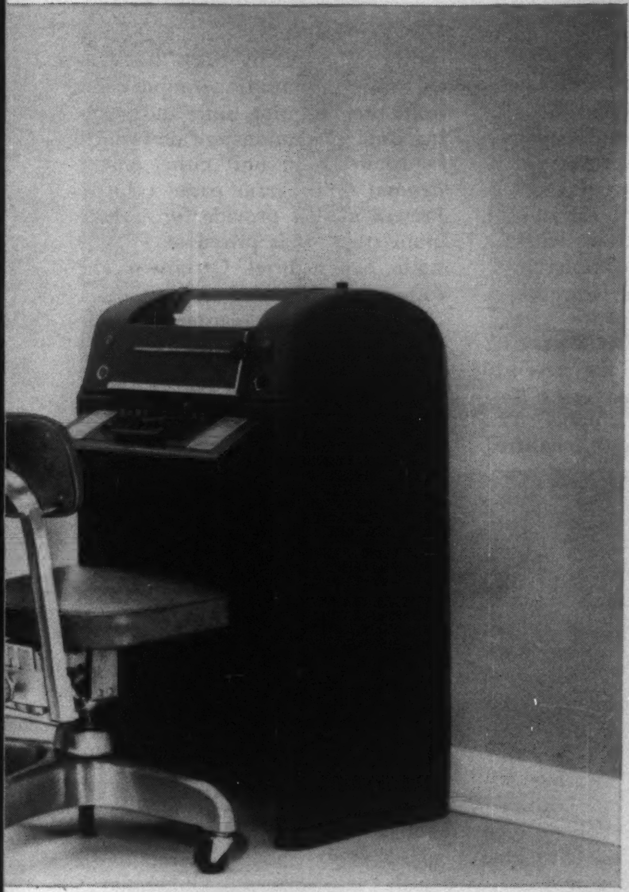
With Teletype equipment you can quickly send a message or transmit data to another location . . . or to any number of locations simultaneously. The receiving points may be in the same building, across the continent, or even overseas.

The "copy" which Teletype equipment produces may be on plain message paper . . . or multi-part business forms . . . and/or punched paper tape. Receiving machines operate automatically. The sending operation, too, may be automated, by means of punched tape.

Presented here are various machines in the Teletype Model 28 line. These new machines operate at 100 words per minute. They are smartly styled and available in colors to blend with modern or traditional office decor. A control device called the "Stunt Box," built into Teletype page printers and automatic send-receive sets, multiplies flexibility and makes it possible to "program" a variety of switching, remote control and selective calling duties.

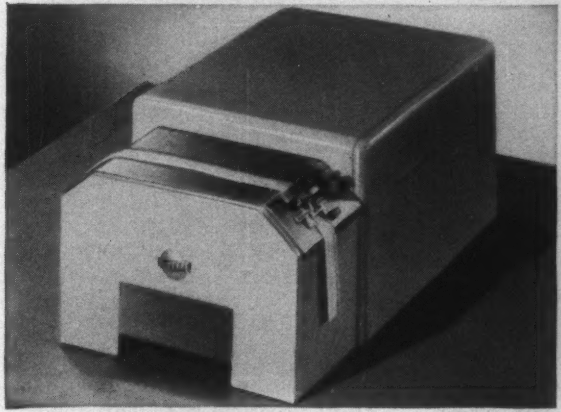
Teletype Corporation manufactures this equipment for the Bell System and others who require the finest in data communications.

More Information. Why not investigate the possi bilities of the Teletype Model 28 line for your business? For free descriptive literature, please write to Teletype Corporation, Dept. *35K*, 5555 Touhy Ave., Skokie, Illinois.



Teletype Model 28 Send-Receive Page Printer Message originating unit, for sending and receiving. Model 28 page units, including the Automatic Send-Receive Set, feature a built-in "stunt box" control system for automatic station selection and electrical control of remote equipment. Horizontal tabulation and form positioning arrangement available.

Teletype Model 28 Tape Reader—Twin Shaft Besides reading punched tape for on-line transmission, twin-shaft reader-distributor design offers facilities for simultaneous output on a multi-wire basis and direct translation (without tape) of signals from an external parallel-wire source for on-line transmission.



TELETYPE®
CORPORATION
SUBSIDIARY OF *Western Electric Company* INC.

(Circle No. 40 on Reader Inquiry Card)

basic magnetic core memory of 2,000 words, which may be expanded to a maximum 10,000 words in increments of 1,000. Input is through paper tape (at 1,000 characters per second), punched cards, or keyboard. Output is to paper tape, card punch, line printer, or high-speed printer. The Burroughs 220 High-Speed Printer system will accept information directly from the 220 Data Processor, or it may be fed off-line from magnetic tape, at speeds up to 1,500 lines per minute.

Maximum magnetic tape system capacity is 500-million digits, with a maximum information transfer rate of 25,000 characters per second. Purchase price for an average Burroughs 220 system is about $500,000.

The Burroughs F5212 Dual Printer Sensimatic is a new machine specifically designed for banks that allows simultaneous and original printing on a combined ledger and statement form with conventional bookkeeping equipment. It incorporates such features as automatic balances, multiple-total adding and subtracting, electric column selection, simplified data input, correction control, automatic four-digit check count and an automatic account counter.

New in the Burroughs MICR (Magnetic Ink Character Recognition) automation program for banks are the new Burroughs Magnetic Character Sorter, which sorts checks at rates of over 1,500 items per minute; and an electronic bank bookkeeping machine with automatic statement processing. Upon command from the bookkeeping machine, the selector electronically searches out any desired statement from a stack of statement forms placed in the selector feeding tray and inserts it into the carriage of the bookkeeping machine without human assistance. On completion of posting it returns the form to a stacker in proper sequence.

A new desk-model bookkeeping machine, style P612, has recently been placed on the market by Burroughs. The machine is designed to put highly automatic mechanized accounting within the reach of small business.

Also, Burroughs Sensimatic Typing Data Processing equipment.

Clary Corp., 408 Junipero St., San Gabriel, Calif. Firm has developed an electronic scanning printer which works directly from logical levels and has a keyboard for supplemental data entry. Called the Clary Model 1961, the scanning printer has 12-digit decoding and printing capacity for electronically controlled data from both decimal and binary-coded decimal sources. Typical applications include missile checkout systems, engineering-analysis equipment, electronic component checkout systems, and quality control evaluation stations.

Firm also has an electronic computing machine (ECM), which is a completely transistorized unit built into a standard office desk. Computations are performed by electronic unit in drawer section of desk; results are printed automatically on adding machine-type print unit mounted flush with desk top. ECM consists of 4 desk-mounted units connected by cable—key entry unit; electronic computation unit; programming unit; and printing unit. Operations are performed by computation unit either under manual or program panel control. Present models provide for 30 program stops. It is priced at $15,000 f.o.b., San Gabriel. Certain of the company's standard adding machines and cash registers can be equipped to punch paper tape as a by-product of normal functioning. Clary also offers a variety of machines designed to read codes for automatic input to electronic systems.

Copy-Craft, Inc., 105 Chambers St., New York 7. The Ormig Selective Data Printer is a machine which selects, eliminates, condenses, and shifts lines, columns, and headings from one master without masks, blockouts, strip masters or shingled forms. It produces from a given master all information on that master, or selected data condensed on single item tickets. Machine advances automatically from line to line; job tickets, each of which describes a different operation and bears certain data common to the entire job, may be produced in tailor-made series.

The New Ormig Electronic performs the same functions as the Selective Data Printer, and allows the selection electronically from a master of any number of lines in any combination desired.

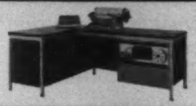
Cummins-Chicago Corp., 4740 N. Ravenswood, Chicago 40. Company has manufactured Perf-O-Data equipment which encodes documents by perforation; the Perf-O-Reader (character-scanning unit) scans the perforated characters by means of a photoelectric reading device. Other equipment includes an auxiliary keyboard which provides for manual entry of variable information or corrections.

Dage Television Div., Thompson Ramo Wooldridge, Inc., Michigan City, Indiana. Firm has made line of closed circuit television equipment which is used in some automatic systems to speed exchange of visual information, as in verifying signatures on documents.

New Dial-Data system provides instantaneous access to visual data. Heart of system is a "date console"

Remington Rand's Univac III is a medium cost, general purpose data processing system with microsecond internal processing speeds and magnetic core storage.

MONROBOT XI *Another Achievement from Monroe*



FROM NOW ON, *electronic computers will all be judged by this one. The* ***MONROBOT XI*** *is an all-purpose electronic computer priced and sized for the moderate-size business unit.* ***MONROE*** *has ingeniously compacted all the functions of the super-giant computer into a desk-size solid state machine any typist can operate. Despite appearances, this is no miracle, though that may be disputed by elated businessmen for whom electronic data processors had always been far too big or too costly. And to those already initiated, it brings the widely expanded benefits of decentralized electronic data processing. Astonishing how little Monrobot XI costs and how fast it will pay you back.*

See the MAN from MONROE

A DIVISION OF LITTON INDUSTRIES

for CALCULATING
ADDING • ACCOUNTING
DATA PROCESSING MACHINES

Monroe Calculating Machine Company, Inc. Sales and service in principal cities everywhere. General offices, Orange, N. J.

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equipped with a special closed-circuit TV camera. Console contains a rack holding 25 slide frames of records, files, information, sheets, schedules, and other constantly changing data. Automatic dial equipment determines which frame is placed before the camera, and what information is sent over the system. Individual dials at each monitor permit the user to dial for visual information as easily as making a telephone call. "Dial-Data" system installations begin at $15,500.

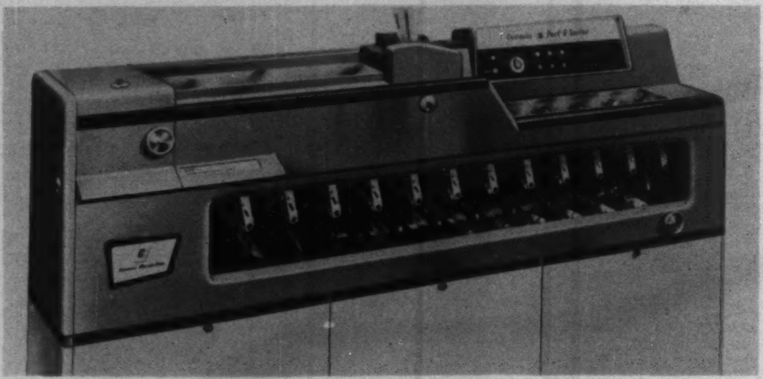
Dashew Business Machines, Inc., 5996 Smiley Drive, Culver City, Calif. The firm has manufactured equipment providing original entry of data into automatic systems. Dashaplate, a basic source of data, is an embossed plate of metal or plastic carrying basic information. Plates can be created at rate of 6,000 an hour by Databossers (controlled by punched tapes or cards), or manually on Datatypers.

Datamatic Div. of Minneapolis-Honeywell, 60 Walnut St., Wellesley Hills, Mass. Firm's Honeywell 400 provides all the capabilities of a full-scale electronic data processing system at a basic cost of less than $8,000 per month. It utilizes the same high-speed peripheral equipment and magnetic tape units as the Honeywell 800. (See listing under Minneapolis-Honeywell.)

Dennison Mfg. Co., 300 Howard St., Framingham, Mass. Firm has Print-Punch marking machines which are used to prepare merchandise tags for subsequent automatic processing. The machines punch basic merchandise data in four- or five-channel code, and simultaneously print information (such as size, price, style number, etc.) that can be read easily by customer and sales clerk. Printing and punching rate is 200 stubs per minute.

Allen B. Du Mont Laboratories, Inc., 750 Bloomfield Ave., Clifton, N. J. Although not IDP equipment, the Du Mont line of closed circuit television has applications in data handling systems since it can provide instantaneous visual transmission of information. The line includes a variety of components designed to be integrated interchangeably into the system.

Designed for small and medium-size companies, National Cash Register's 390 digital solid-state computer operates on a 220-volt circuit, requires no air conditioning.



The Perf-O-Sorter by Cummins-Chicago is an electronic digital sorter that reads perforated characters and codes on check-size documents at speeds up to 550 per minute.

Digitronics Corp., Albertson Ave., Albertson, L. I., N. Y. Company's Dykor Model D104 bi-directional Tape Converter speeds up the flow of data between remote stations and a central computer installation. Paper tape data is introduced into the D104 Converter by a Dykor photoelectric reader operating at 300 characters per second. Magnetic tape is read or prepared in a form completely compatible with the computer it is to feed.

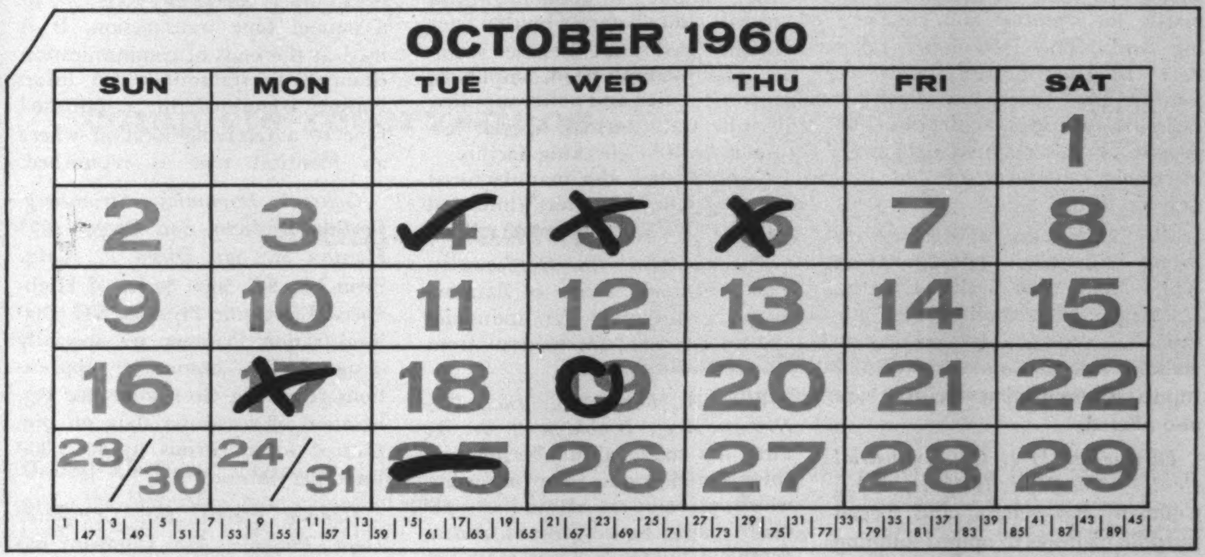
Model 3500 Dykor photoelectric reader is a completely solid-state unit which stops before the next character at reading speeds of 1000 characters per second.

A new bi-directional, high-speed perforated tape reader designated Model B3500 operates on loops or strips of tape. A bi-directional spooler is available at speeds up to 300 characters per second, with 8-inch reels. Part of the completely transistorized circuits are two flip-flops which provide reliable control of the four solenoids used to control start and stop in either direction. The B3500 enables high-speed search and then reverses to the beginning of the block which can then be read in its entirety.

The D300 is Digitronics' latest all-solid state data converter. In addition to tape-to-tape conversion, the D300 series can also have card input and card output. This new series in the Digitronics line enables the user to specify only these features which he requires.

Eastman Kodak Co., 343 State St., Rochester 4, N. Y. The Kodak Minicard System is an ultra high-speed information handling system which records documents, pictures, or other information photographically on tiny pieces of film about the size of a postage stamp. Through the use of electronic controls, the Minicard system can be utilized to retrieve any desired information by searching the Minicard film records automatically at speeds of up to 1,000 frames a minute. New system combines advantages of mi-

Mark a date . . . to see the new
UNIVAC OPTICAL SCANNING PUNCH



. . . another major first for 90 column punched-card users!

- **SINGLE-STEP AUTOMATION.** Eliminates key punching. Reads marks *optically*, transforms them into punched holes—*all in one operation.*
- **EASY, ACCURATE.** No special pencils are needed. Use any soft, ordinary pencil.
- **FASTEST.** Reads and punches up to 6000 digits per minute, or 9000 cards per hour.
- **BIG CAPACITY.** Senses and punches up to 40 columns of marking on one side, 80 columns using both sides.
- **BUILT-IN RELIABILITY.** Adjusts even to faint markings. Internal checks eliminate errors.
- **BROAD APPLICATIONS.** Piecework computation, inventory, billing, order department, labor distribution, many others.
- **BROAD USABILITY.** Anyone who can use an ordinary pencil.

For full details, call or write the Remington Rand Branch Office in your area. Ask for a free copy of the NEW BROCHURE "The Optical Scanning Punch."

REMINGTON RAND
UNIVAC
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crofilm, punched cards, and digital computing techniques.

Electronic Associates, Inc., Princeton Computation Center, Long Branch, N. J. Company has made analog computers, designed primarily for scientific and engineering work. The Dataplotter takes data from punched cards or punched paper tapes and plots this information in continuous-line graphs. In this manner, data from electronic computers are put into graphic form.

Electronics Corp. of America, 10 Potter St., Cambridge 42, Mass. This company has produced a series of Magnefiles, desk-size electronic units, for maintaining perpetual inventory information with various inputs. Computation facilities are also offered.

Farrington Mfg. Co., Industrial Center, Needham Heights, Mass. Company has general and special purpose high-speed, optical-scanning (alpha-numeric readings) machine; it also offers associated identification and imprinting equipment for commercial data handling application.

Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20. Company has high speed tape readers with speeds of 200 and 400 characters a second which are used to convert codes in punched tape for input to computers and for similar uses. Tape reading and control are accomplished by photoelectric means. Friction drive is used. New high speed tape reader type TR7 is self-contained, free standing unit capable of "reading" 5-, 7-, or 8-level tape at any speed up to 1,000 characters per second. A fast rewind is also provided giving less than 30 seconds rewind time for 1,200 feet of tape. Reader operates under either computer or manual control, and will read character by character at high speed. Unit includes spooling, photo-sensing head, amplifiers, control circuits, and power supplies, all fully transistorized. Special feature is built-in checking facility.

Company has also manufactured two electronic computers (intended primarily for scientific work).

Fisher & Porter Co., Hatboro, Pa. Firm has made a line of data reduction equipment for industrial application, used for readout from manufacturing process.

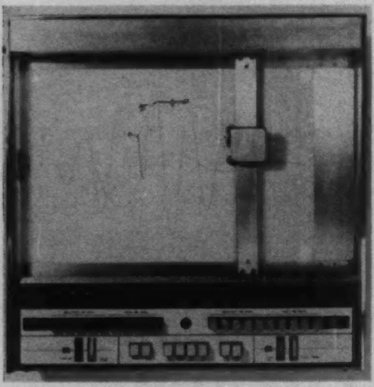
Wm. A. Force Co., Inc., 220 Nichols Ave., Brooklyn 8, N. Y. Firm has made a numbering machine for electronic data processing which prints dots, dashes, or specially shaped figures instead of conventional numerals. Code markings representing serial numbers are printed on documents like checks, order forms, and other commercial papers processed by electronic scanning. A Convex 5-Channel Tape Coder is used on rotary printing presses to print dots corresponding to consecutive serial numbers, simulating 5-channel tape. The codes are intended for use as inputs to IDP systems.

Friden, Inc., 2350 Washington Ave., San Leandro, Calif. Company manufactures Friden Flexowriter, an automatic writing machine. Latest models operate automatically from tape, edge-cards, or tab cards, and produce one or more by-product tapes or cause simultaneous punching of tab cards. New Model CTS Computyper is an automatic billing machine, tape-operated and tape-producing. It also reads and causes simultaneous tab card punching. Machine has interchangeable program panel and actuator racks, and requires only a typist for operation. Selectadata is a tape-reader-selector-sorter which swiftly searches punched tape for pre-determined data, then causes readout by Flexowriters or Computypers. In an automatic billing application, for example, Selectadata may select and cause printing of date, order number, and individual items. Another billing machine, Model B Computyper, is operated by typist, and takes price and quantity inputs from keyboard, computes and prints results automatically. Teledata is a tape transmitter-receiver with built-in accuracy check for 5-, 6-, 7-, or 8-channel tape transmission. It is used at the ends of communication channels to transmit coded information contained in a punched tape to a receiving location where an identical tape is repunched.

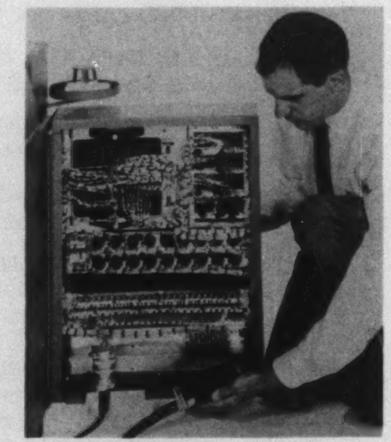
General Dynamics, Stromberg-Carlson Division, San Diego, 1895 Hanson St., San Diego 12, Calif. Firm has S-C 5000 Series of High-Speed Electronic Printers. S-C 5200 Registration Printers are specially designed for commercial applications requiring close tolerance registration of computer data on preprinted forms. Prints up to 5,000 lines per minute.

General Electric Co., Computer Dept., Phoenix, Ariz. Company has recently developed the GE 225 information processing system. Company also has GE 210 data processing system. Also recently developed is the 312 control system for data processing. Unit uses punched paper tape input and electric typewriter output.

Haloid Xerox Inc., 6 Haloid St., Rochester 3, New York. Print-out systems are available which make



Digital or analog data is graphically presented by the XY Plotter, made by Librascope division General Precision, Inc.



Systematics' C750 Punched Tape to Card Converter has parity checking by plugboard wiring as a standard feature.

CONTROL AT UNITED

"Moore forms help us complete reservations 5 times faster"

M. L. Perry, Director of Reservations, United Air Lines

United Air Lines' automated reservation system has given the company tighter control of space on its Mainliner flights. The chances of over- or under-selling seats have been reduced; waiting list passengers get seats more often; there are fewer expensive "no shows." Other benefits to United include end-of-day statements of bookings, and more accurate and up-to-date summaries for analysis.

The System is built around a network linking all ticket agents with a single electronic computer in Denver. Booking information for round-trip or stop-over flights is sent manually by teletypewriter from the booking office to Denver. This comes out as punched tape, coded to produce a punched card for each airport on the passenger's route. The cards are fed into the computer, which accepts the information and issues a status message further confirming the reservation. A new tape is made from the cards, which are then used for statistical reports to management.

Confirmation is sent, using the second tape, and printed automatically by teletypewriters in the downline offices on a card. In the past, the facts were transcribed by hand. Machine printing has cut out this bottleneck. Personnel morale is better now that this boring job is gone. The chances for error are reduced. The cards are continuous forms, specially designed by Moore. They are United's control in print.

"The Moore man's advice on systems paperwork helped us a great deal when we set this system up," said M. L. Perry, Director of Reservations at United Air Lines. To find out how the Moore man can help you get the control your business needs, whatever its size, write the nearest Moore office.

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MOORE BUSINESS FORMS

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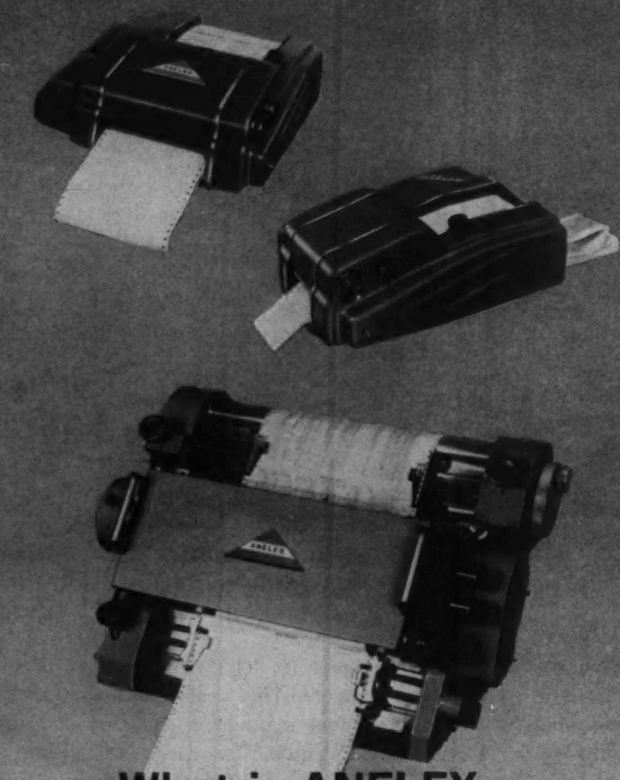

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△ Up to 320,000 numeric or 240,000 alpha-numeric characters per minute.

△ Perfect alignment, fully formed characters, multiple copies and precise conformity to the most complex preprinted forms.

△ Reliability proven by ten years' experience and assured by use at Scientific, Military, Commercial, Industrial, Insurance and Banking installations.

Anelex High Speed Printers print from magnetic tape or "on-line" from data processing systems . . . on single or multiple carbons, pressure sensitive papers, heat transfer type papers, preprinted forms or card stock. All Operator Controls are easily manipulated by office personnel without specialized experience or skills.

For systems designers, Anelex Printers provide the widest possible choice of capabilities, because standard production modules can be combined to meet almost any specifications as to: operating speeds (up to 2,000 lines per minute), number of columns (8 to 160), number and type of characters per column (up to 66) dimensions of preprinted forms (up to 20" x 22").

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use of the xerographic process and Stromberg-Carlson's Charactron shaped beam tube. The SC-5000, as it is called, can print at the rate of 10,000 characters per second from on or off-line signals or from light transmissions.

Xerox Copyflo 11 printers are available which, from original documents or microfilm, produce at the rate of 20 feet of print per minute, an 8½ x 11-inch print in less than three seconds. A Copyflo 24-C continuous printer is also available which prints from individual frames of microfilm mounted in data processing (EAM) cards. Prints up to 24 inches wide are produced at the rate of 20 feet of print per minute. Prints emerge dry, ready for immediate use.

Intelligent Machines Research Corp., Subsidiary of Farrington Manufacturing Co., 7019 Edsall Rd., Alexandria, Va. Firm has produced equipment which reads printed characters, both alphabetic and numeric.

Intelex Systems, Inc., 67 Broad Street, New York 6. Company is associate of ITT engaged in providing systems for the electronic control of repetitive clerical processes, and supplying input and output equipment for data processing systems, such as high speed teleprinters, tape punches, electromechanical and photo-electric tape readers. The new light-weight Creed Model Seventy-five Teleprinter operates at 100 words per minute. It is generally used as an input and output device for integrated data processing systems.

Creed Model 3000 Punch is an ultra high-speed paper punch for direct recording of five to eight tracks of output computer digital information at speeds of up to 300 characters per second—3,000 words per minute. The punch operates on a multiwire start-stop basis incorporating revertive signalling arrangement for input control.

International Business Machines Corp., Data Processing Div., 112 East Post Rd., White Plains, N. Y. IBM produces and markets a complete line of punched card data processing machines and electronic

YOU can END Office Collating Problems with the New FARRINGTON Automatic Collator

- **FAST**... 18,000 to 90,000 pick-ups per hour
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- **FLEXIBLE**... handles all sheets from 6″ x 7″ to 11″ x 17″; weights from 13 to 90 pounds
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Used in offices throughout the world, the Farrington Bookleteer collates, staples and folds 4500 booklets per hour—automatically. Service available everywhere.

5-Station Farrington Vertical Collator. Models with 4, 8, 10, 12, 15, 16 and 20 stations also available.

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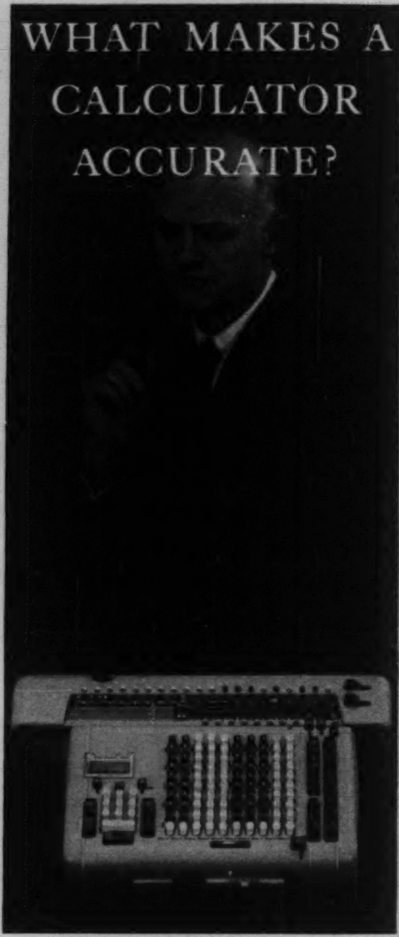

We're proud of the mechanical accuracy of the Friden fully automatic calculator. ***But neither it nor any other calculator can get a right answer from a wrong entry.***

The calculator that allows the smallest margin for operator error will actually prove to be the most accurate.

The Friden SBT requires fewer manual keystrokes, fewer operator decisions than any other calculator on the market.* *In terms of day-to-day output, this makes it the most accurate calculator you can buy.*

For a no-obligation, ten-minute demonstration of "The Thinking Machine of American Business," call your Friden man or write: Friden, Inc., San Leandro, California.

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data processing systems in various sizes and types. Punched card equipment includes card punches, sorters, interpreters, verifiers, collators, reproducers, accounting machines, and auxiliary equipment such as card-to-tape and tape-to-card converters. Also included in the product line is a series of electronic data processing systems in a complete range of capacities for scientific and commercial applications. Also, statistical machines, paper tape processing machines, card transmission equipment, and equipment designed to fulfill specific data processing needs.

IBM's 609 is small scale, solid state, completely transistorized calculator. It has 240 positions of magnetic core storage and 80 program steps which can be increased in increments of 16 to 384 positions of storage and 144 program steps.

The 1620 Data Processing System is small scale stored program computer designed for scientific research, engineering and management science computations.

IBM 650 Data Processing System for general-purpose computation uses punched card input and output. Additional units can be incorporated to provide magnetic tape input and output, printer output, paper tape input, magnetic core storage, and disk storage with random access and direct interrogation.

IBM 1401 Data Processing System is solid-state computer of great flexibility for business computation. May be operated as an independent system in conjunction with IBM punched card equipment, as auxiliary equipment to IBM 700 or 7000 series systems, or as check processing system in conjunction with IBM 1210 Model 4 Reader-Sorter. It features new concept in high-speed printing, employing an endless chain of engraved type which moves across the face of business documents at a rate of 600 lines per minute.

IBM's large data processing systems include the 704; 705; 705III; 709; 7070; 7074; 7080; and 7090.

Company's computing systems of the STRETCH class can complete more than 75 billion arithmetic operations a day, executing as many as two million instructions per second. Systems contain a "look ahead" device which anticipates instructions and data requirements.

Series 1200 Character Sensing Equipment is new electronic system for the automatic handling of bank checks. Equipment makes use of an Arabic character "common language" which can be read by both men and machines.

Also, Tele-Processing equipment; 1009 Data Transmission Unit; Data Transceiver; 1001 Data Transmission System; 7701 Magnetic Tape Transmission Terminal; and 357 Data Collection System.

International Telephone & Telegraph Corp., 67 Broad St., New York. Firm has communications facilities; also, an automatic system for processing bank checks, performing deposit accounting, and related reporting and analysis functions.

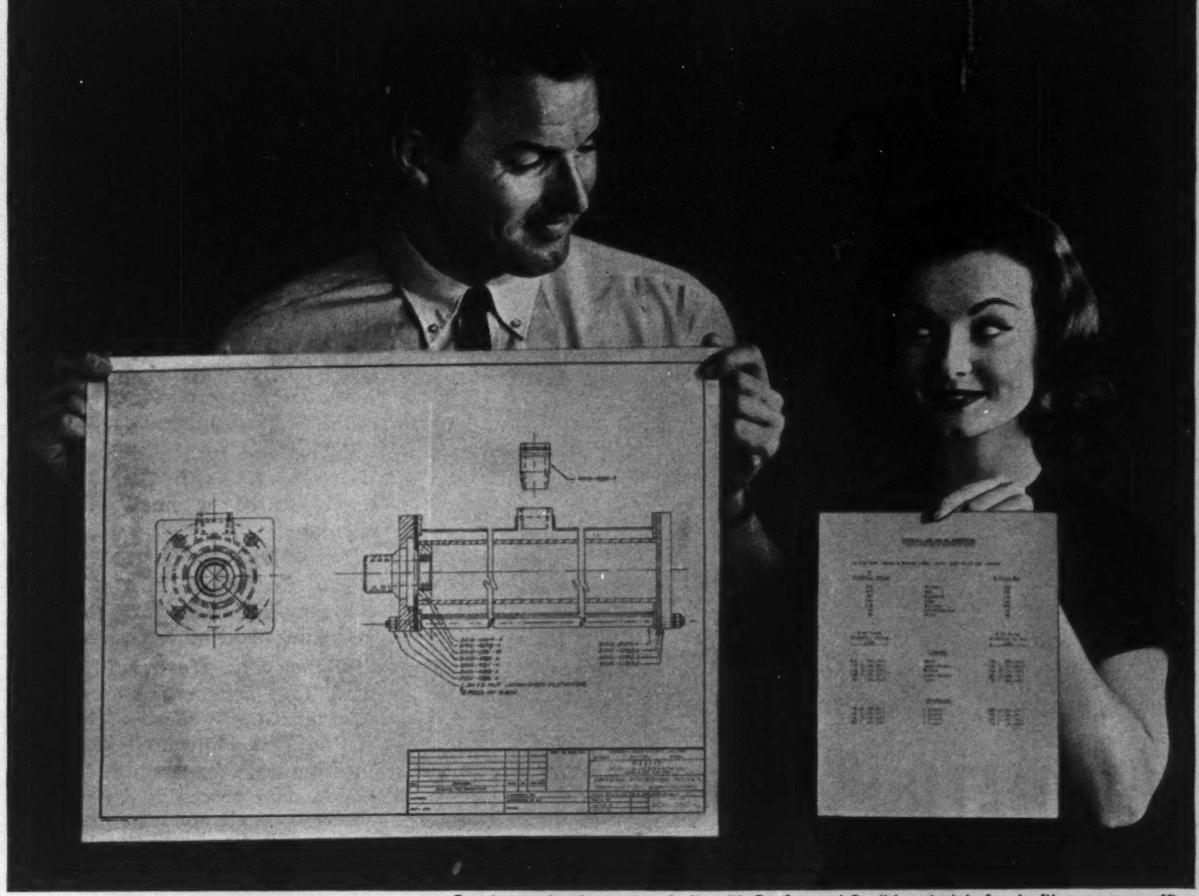
The Jacobs Instrument Co., Bethesda 14, Md. Firm has made electronic digital computing equipment.

A. Kimball Co., 444 Park Ave. South, New York 16. Company manufactures the "75" Punch Print Machine for encoding as many as 29 columns of punched and printed data into tickets and tags to serve as automatic input for punched cards and punched paper tape, and as input for integrated data processing systems. Kimball Portable Punch is slide-set, and is used for encoding 12 additional columns of variable data in the Kimball Punch Print Ticket. Tag Reader Model KRB converts print-punch tickets at the rate of 100 per minute to standard size tabulating cards for further processing.

Kleinschmidt Laboratories, Inc., Div. of Smith-Corona Marchant, Lake Cook Road, Deerfield, Ill. The company produces a line of teletypewriting equipment for use in communications. The TT-195 High Speed Typing Reperforator punches and prints on paper tape at the rate of 750 words per minute, or 75 characters per second. It is used for receiving coded communications. The firm's line includes teleprinters, transmitting units, typing perforators, and accessory switching and selecting equipment.

Laboratory For Electronics, Inc., 1079 Commonwealth Ave., Boston 15, Mass. Firm has new data storage and display system, called Rastad. The system can store, re-

NEW FROM OZALID



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New Ozafax semi-dry papers and developers now bring Ozalid quality to every Diazo Copy Machine

From Ozalid—the nation's leader in dry diazo materials for more than a quarter of a century—comes Ozafax, the newest line of top quality semi-dry copy materials. Regardless of the make machine you own, you can now look to Ozalid as a new source of supply for all your diazo copying needs, and look to Ozafax for . . .

Better Contrast! A new, advanced diazo coating formulation fastens a sharp black image against a clean white background. On the shelf or after processing, the bright white appearance of Ozafax papers lasts.

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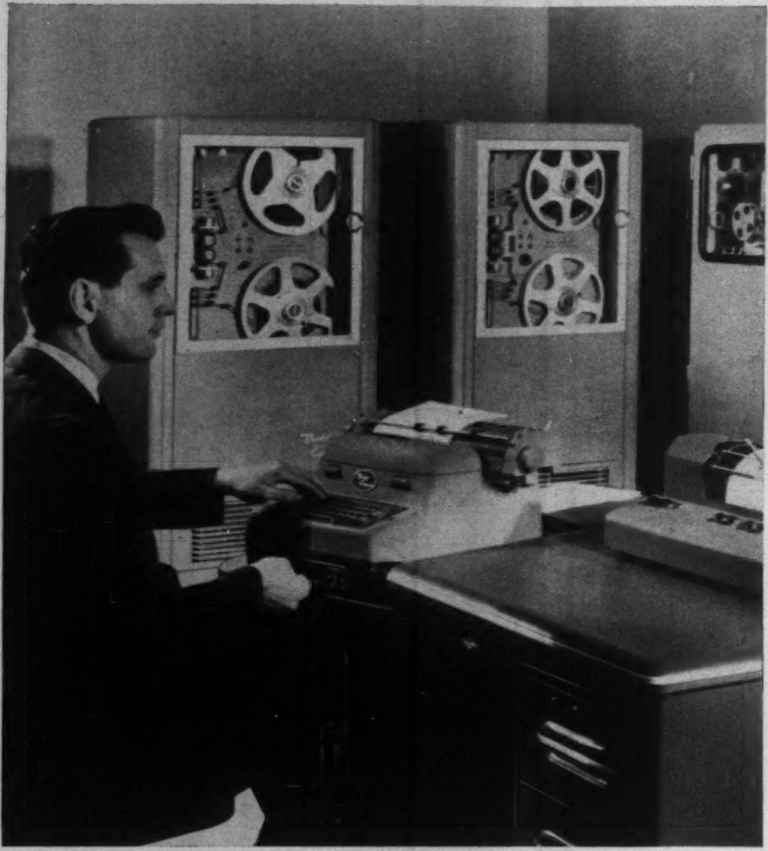
trieve, and display information almost instantaneously. System consists of from 1 to 33 high density magnetic file drums containing 300 tracks on each drum, a symbol generator which simultaneously generates each of the alpha-numeric and abstract characters required in report, map, chart, and other abstract displays, a master viewer and central console plus as many associated viewing consoles as required, and the necessary associated electronic controls and power supplies. Each file drum has a storage capacity of 1.7 million alpha-numeric characters, giving a 33 drum system a total storage capacity of some 55 million alpha-numeric characters.

Librascope, Inc., 1607 Flower St., Glendale 1, Calif. Company has manufactured a small electronic computer.

Litton Industries, 336 N. Foothill Road, Beverly Hills, Calif. This company has made small electronic calculators and other equipment.

Minneapolis - Honeywell Regulator Co., Datamatic Division, 60 Walnut St., Wellesley Hills 81, Mass. The Honeywell 800 is a medium-scale (expandable to larger scale) data processing system, consisting basically of a central processor, console, five magnetic tape units, a printer, and a card reader. The all-transistorized 800 is a compact, versatile, and competitively priced system which processes a number of jobs simultaneously—each independently programmed and automatically controlled. Automatically controlled parallel processing, as it is called, is particularly suited to distribution of premium payments, payroll accounting, inventory control, stock transfer accounting and many other data processing routines pertinent to insurance, industry, and banking. System accommodates all types of input equipment although major input medium is punched cards. Central Processor (heart of system) utilizes multi-function instructions and operates at a speed of 30,000 three-address operations per second. It is specifically designed to attain high speeds for sorting, merging, and file maintenance procedures. System features Ortho-



AUTOMATION IN THE OFFICE

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New "point-of-sale" punched tape records allow clerks to give customers better personal service .... June

Magnetic ink character reading devices, optical scanners promise revolution in input problems and time lag .... July

Sweeping personnel changes foreseen as result of automation .... August

Middle and top management levels will be affected by automation .... September

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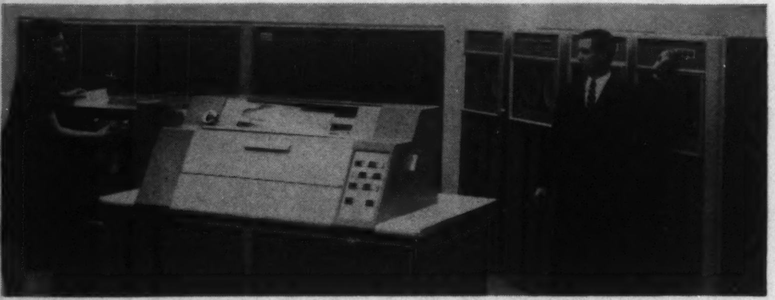
tronic control, a method of automatic record protection. The system can carry simultaneously both data processing and scientific computation.

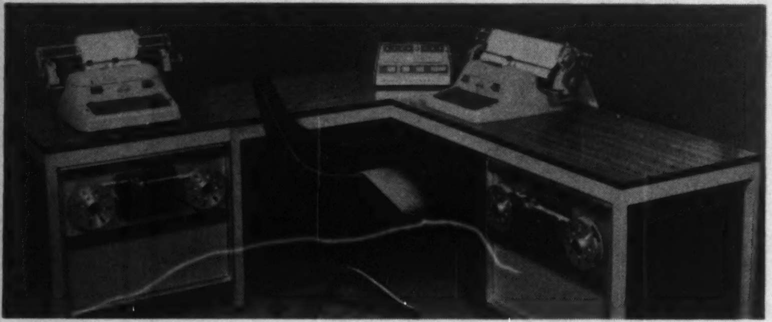
The Honeywell 400 provides all the capabilities of a full-scale electronic data processing system at a basic cost of less than $8,000 per month. It utilizes the same high-speed peripheral equipment and magnetic tape units as the Honeywell 800, and it is fully compatible with the larger, more powerful system.

High tape speeds and multi-function instructions make the Honeywell 400 particularly adept at high-speed sorting and file maintenance, the most basic functions of data processing.

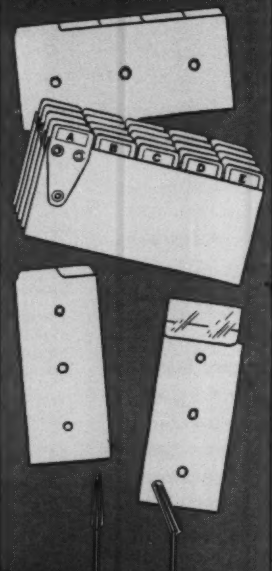
An automatic program called EASY simplifies and speeds programming, and programs written in EASY language can be run on



The Honeywell 400 is full-scale, magnetic tape data processor recently introduced by Datamatic Div. of Minneapolis-Honeywell; suitable for medium-size applications.



Monroe Calculating Machine Co.'s Monrobot Mark XI is solid-state, general purpose electronic computer; it weighs 300 lbs. and can handle more than 40 jobs.



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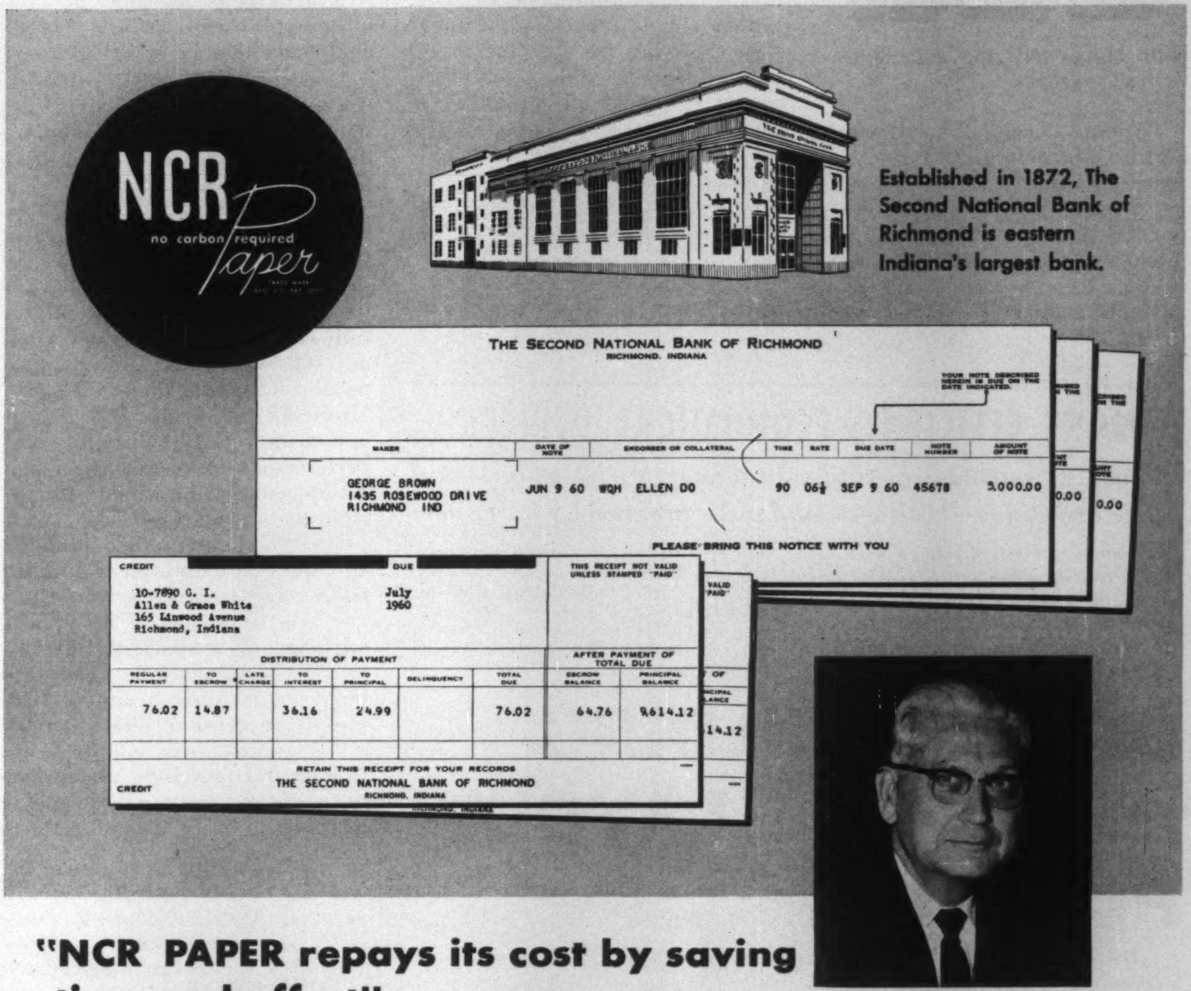

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"We find NCR Paper duplicate mortgage loan receipts save time for our customers and employees. We also get a clear readable record of each payment and new loan balance.

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ELIMINATES
CARBON PAPER**

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both Honeywell 400 and Honeywell 800 systems.

Monroe Calculating Machine Co., 555 Mitchell St., Orange, N. J. SynchroMonroe is a data processing machine which simultaneously punches tape or cards as a by-product of regular accounting jobs such as payroll, accounts payable, accounts receivable, savings passbook posting, stock record, or general ledger. A control chassis contains a simple plug-board arrangement allowing the machine to be programmed in the user's office, should a change in punching requirements arise. A choice of 5-, 6-, 7-, or 8-channel tape is offered, or direct connection to an IBM 024 or 026 card punch. Machine is designed for flexibility and adaptability to changing needs.

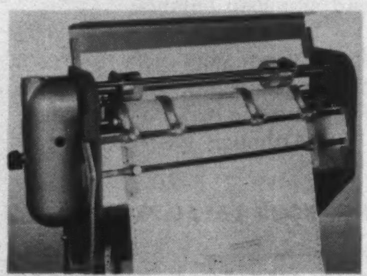
Monrobot IYLX is desk-size electronic computer designed primarily for billing applications; however, it may be programmed to perform other applications. Price is $9,650; equipment may be leased.

Monroe Distributape System is electronic accounting system designed to speed the accumulation, distribution, and analysis of data for retail stores.

Monrobot Mark XI is said to be first solid-state general purpose electronic computer in the $25,000 price range. The computer can handle more than 40 jobs and is fully transitorized, operates from any AC wall outlet and requires no air conditioning. Price is $24,500; Monrobot XI weighs 300 lbs., is said to be equal in versatility and performance to costlier machines. Equipment may be rented or leased from the manufacturer.

Synchro-Monroe adding machines are equipped to provide a punched paper tape completely automatically as a by-product of the regular operation of a standard full keyboard adding machine. Tape can be processed directly into a computer, converted to punched cards or transmitted over teletype wires to a central processing center. Synchro-Monroe direct-to-card adding machines transfer data directly to punched cards.

The National Cash Register Co., Main & K St., Dayton 9, Ohio. NCR offers IDP equipment of several types. New Class 31A is latest machine in NCR line of accounting equipment. It has electrically controlled mechanisms for determining and initiating the proper posting program of automatic machine operations. This feature can eliminate the need for an operator to compare a customer's balance and payments to determine whether he should or should not be mailed



Power Slitter for auxiliary forms handling equipment is from The Standard Register Co., Dayton, Ohio.

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By KENNETH H. RIPNEN

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Factors that management must take into account in its choice of new office space—whether to build or rent, site location, selection of an architect, how to modernize an existing building, etc.—are carefully reviewed with many useful suggestions.

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8. Building Services
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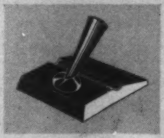

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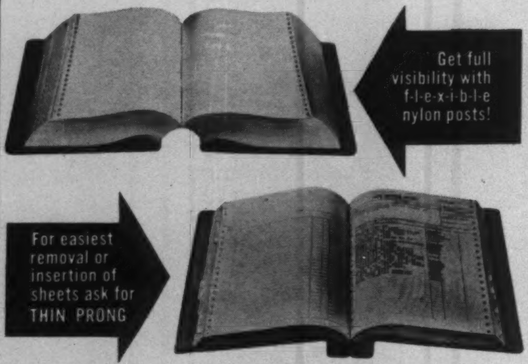
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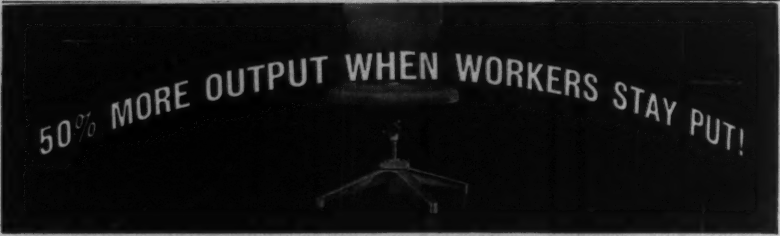
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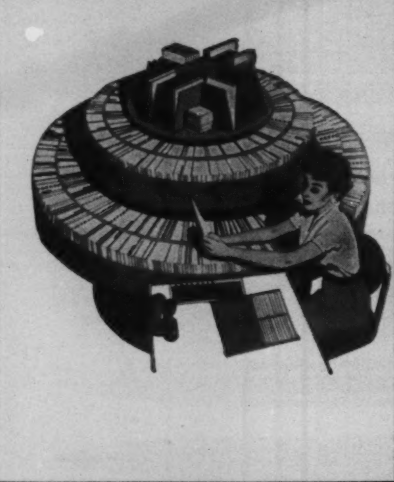

A touch of a button spins data to user at electronic speed! Look at any point in your operation where record or data files are used. You're apt to see workers spending a third to half their time shuttling between desks and cabinets, reaching, stooping, drawer pulling. New Acme Rotaries end this waste motion completely! At desks around a smartly modern Rotary, 1, 6, 12 users or more have instant access to as many as 250,000 records. To see how Rotaries save time, money, and up to 50% in floor space, SEND COUPON TODAY.

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Acme Visible Records, Inc., 2110 W. Allview Dr., Crozet, Va. Please send free report on the "Revolution in Record Handling" . . . . showing many types and sizes of power and manual Rotaries.

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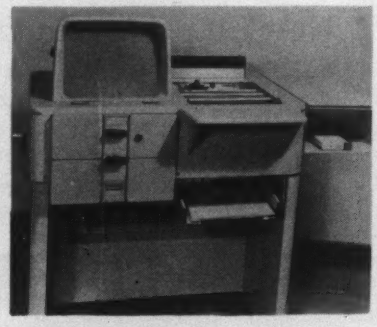
a past-due statement. Similarly, the feature can automatically decide that an inventory item should or should not be replenished. The feature can automatically verify the accuracy of balance pickups, cause the pickup errors to be automatically cleared, and the carriage automatically repositioned for making the pickups again. It also features automatic totaling, subtotaling, repeat or date printing, and so on, as the carriage moves in either forward or reverse direction; increased number of automatically controlled selections for both forward and reverse carriage tabulations; and ability to capture data automatically in either punched paper tape or punched card form as a direct by-product of the original posting operation. The 304 Data Processor is a medium size computer which includes such units as a universal converter, high-speed paper tape punch, high-speed printer, tape handlers and controllers, high-speed card reader, and high-speed paper tape recorder.

The National Alpha-Numeric Card Punch Coupler links a National accounting or adding machine to a card punch machine, permitting alphabetical or numerical information to be automatically punched into cards.

Post-Tronic equipment reads magnetic codes on paper documents, and is currently used largely for bank accounting functions.

NCR has also released for sale a complete step-by-step system which automates the handling of checks in commercial banks.



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TOOLS OF THE OFFICE

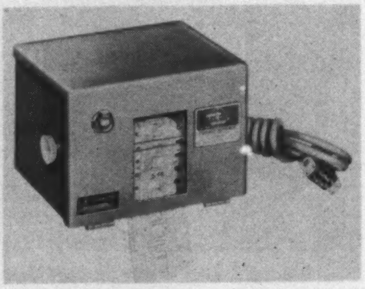
Philco Corp., Government & Industrial Group, Computer Division, Willow Grove, Pa. The Philco 2000 is a large scale, ultra high-speed, all transistor electronic data processing system which is suited to a long range of applications such as file maintenance, payroll, general and cost accounting, inventory control, premium billing, bank deposit bookkeeping, sales order billing, stock transfers, revenue accounting, market analysis and management reports, and a great variety of others. It is available in a wide variety of components and system designs, each component compatible with every other one for maximum speed and reliability. Approximate cost of Philco 2000 is $1,500,000 and the rental charges are about $31,000 per month. Heart of system is central computer, the actual data processor of system, major components of which are internal storage units and the arithmetic and control sections. These components store the data and instructions, execute the instructions in sequence, and perform arithmetic and logical operations. Main internal storage is high-speed, coincident current, magnetic core memory. Basic size is 4,096 words. Intermediate speed storage is provided by magnetic drums. System has repertoire of over 200 instructions; it accommodates wide variety of input-output media.

Potter Instrument Co., 115 Cutter Mill Road, Great Neck, N. Y. Firm has manufactured components for use in IDP systems, including high-speed printers taking inputs from magnetic tape, punched paper tape, and directly from computer systems; random access memory units; magnetic tape handling equipment; and punched tape readers.

William L. Raub, Inc., Silver Spring, Md. Company has punchwriter, which is compact, electronic check-writing machine that simultaneously and in one action prepares bank money orders for input to tabulating equipment and for easy visual legibility. Unit prints amount on face of check in legible type and at the same time punches amount in standard tabulating code, thus enabling both machines and humans to read checks. Unit punchprints single cards or manifold, five-part forms.

J. B. Rea Co., 1723 Cloverfield Blvd., Santa Monica, Calif. Company has made a line of Readix electronic computers in the small-to medium-size class for general purpose use. Readix Dual Computer uses punched cards and magnetic tape, is a completely decimal computer, and is equipped to handle both research and development work and such business operations as payroll, sales analyses, labor distribution problems, and so on.

Radio Corporation of America, Camden 2, N. J. Presently, there are three completely integrated data



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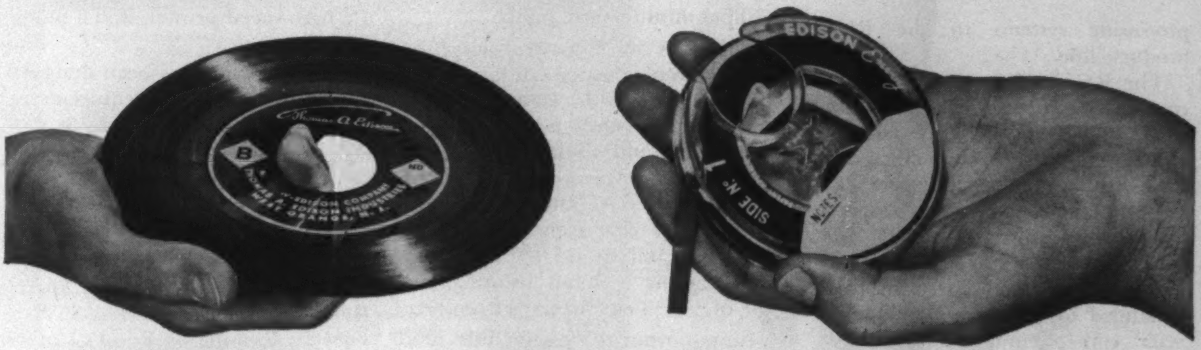
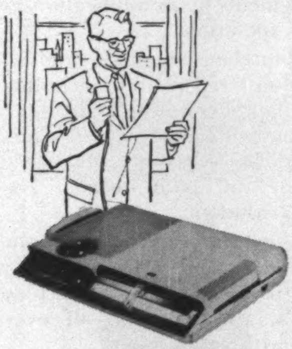


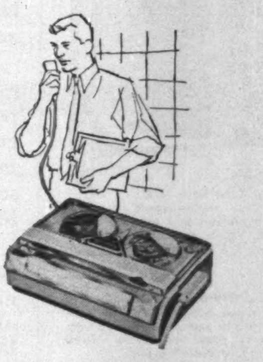
"Which kind of dictating machine is better for us . . . disc or tape?"

It depends on your specific needs . . . and your budget! The truth is, budget-priced tape units are best for certain jobs; top-quality disc instruments for others. For example, if you require the facility for fast, easy, virtually automatic dispatch of correspondence—with "same-day" mail service—your best bet is a machine using the 15-minute, easily transcribed disc. Or, if you want long "play" time for, say, sales training—your requirements are answered best by a tape unit.

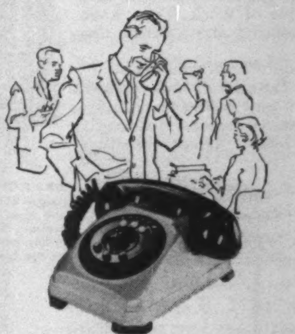
Edison covers every price range, every type of dictating machine. As Dictation Center U.S.A., it can fill your business recording needs *well*, no matter what they are. Here's part of the complete Voicewriter line that makes this possible:



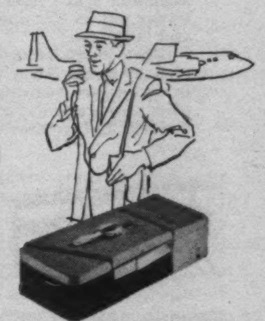
"The Voicewriter . . . Edison's finest full-featured office dictating machine!"
Far and away the favorite with executives and volume dictators, the automatic Voicewriter offers every dictating convenience . . . including features that eliminate operational errors. Not only helps clear away correspondence . . . it captures ideas, instructions, even speeches. Records on the Edison Diamond Disc.



"The Edison Envoy . . . magnetic tape dictation at a budget price!"
New Envoy brings you important features for simple, convenient dictation. Records conferences, phone conversations, too. Also serves as a transcriber when you add optional accessories. Ideal for small businessman, up-and-coming professional man—anyone with a need for dictation facility at a low price.



"The Edison Televoice system . . . multi-phone dictating facility for remarkably low individual cost!"
Companies with many "occasional" dictators find this unique system encourages fast dispatch of all paperwork . . . smooths flow of work to typing staff. Each correspondent has individual dictating phone connected to disc recorders in secretary's office.



"The Midgetape . . . tiny 3-lb. battery-powered tape recorder!"
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processing systems in the RCA product line.

The RCA 301 is complete, low-cost EDP system. It has processor with 10,000 individually addressable, alpha-numeric characters; disc file with a 2,500 characters per second transfer rate; high-speed 600 lines per minute printer; and card reader with speed of 600 cards per minute. This system may be expanded by adding a 20,000 character core memory, one or two Hi-Data clusters of six magnetic tape stations, paper tape reader and punch, up to four more disc files for a total capacity of over 23,000,000 characters, and a 100-card-per-minute card punch.

The RCA 501 is general purpose system employing modular construction, transistor logic, centralized control and accommodates both on-line and off-line inputs and outputs. For storage, the RCA 501 uses high-speed storage expansible from 16,384 characters to 262,144 characters and up to 62 magnetic tape stations with an information rate of 33,333 characters per second.

Input-output devices include 300 characters per second paper tape punch, 150 cards per minute card punch, 1,000 character per second paper tape reader, 400 per minute card transcriber, 600 lines per minute high-speed printer, and a monitor printer.

The RCA 601 has been designed to fulfill large volume requirements in such varied applications as payroll, engineering analysis, or file maintenance. System features 120,000 alpha-numeric characters per second tape stations (180,000 numeric characters per second).

Remington Rand, Div. of Sperry Rand Corp., 315 Park Ave. S., New York 10. Remington Rand's Univac III is high-performance, medium cost, general purpose data-processing system. Among its features are:

Microsecond internal processing speeds usually associated with computing systems designed for engineering and scientific application.

Fast-access magnetic core storage available in multiples of 8,192 words, yielding a memory size of 8,192; 16,384; 24,576; or 32,768 words. These dimensions enable the UNIVAC III System to process large segments of an application in a single operation.

A comprehensive single-address instruction repertoire including powerful programming logic, automatic index register modification, multiple short-word operands, field selection, and both decimal and binary arithmetic.

Sustained simultaneous computation, reading and writing of magnetic tape, reading and punching of cards, and printing, all overlapped with computing.

A compiler which accepts as its input Basic COBOL (Common Business-Oriented Language). Actually, COBOL is a concise form of the English language designed for the statement of business and government agency problems.

Basically a "bit machine," the UNIVAC III System can be programmed to perform many types of special manipulations. This ability allows the programmer to use exceedingly sophisticated programming. Bit manipulation also allows the system to utilize a variety of input-output codes.

Univac II is digital electronic computer with magnetic core storage. Accessory equipment includes Uniserve units, reading from and writing on metal magnetic tapes;

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Only Office Valet Units provide an efficient, completely flexible space-saving and sanitary system of storing employee "wraps." They will double lockerroom capacity, and can be fitted into any available space near point of work. They keep wraps out in the open, spaced apart, aired, dry and "in press."

Office Valets accommodate 3 persons per sq. ft. of floor space. They are functional and modern in design, are beautiful in new baked enamel finishes and are built for lifetime service of strongly welded and reinforced heavy gauge furniture steel.

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S-6 Office Valet Costumer. Six spaced hangers — six individual hat spaces—and umbrella rack. Ideal for private offices and reception rooms.

No. 342 Valet Wall Rack mounts directly on any available wall space. 3, 4, and 5 ft. units interlock to make continuous racks of any length.

2U-4. This attractive 4-ft. double-faced unit accommodates 24 people.

Exclusive Office Valet Design Features

Hats rest on high embossed ribs in spaces individualized by even higher cross ribs. Shelves slotted to permit drying and prevent dust accumulation.

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The forward edges of shelves are smooth wide closed face channels. Forward ends of bracket arms provide slightly over-lapping radius facing. Valet equipment always has a custom made appearance.

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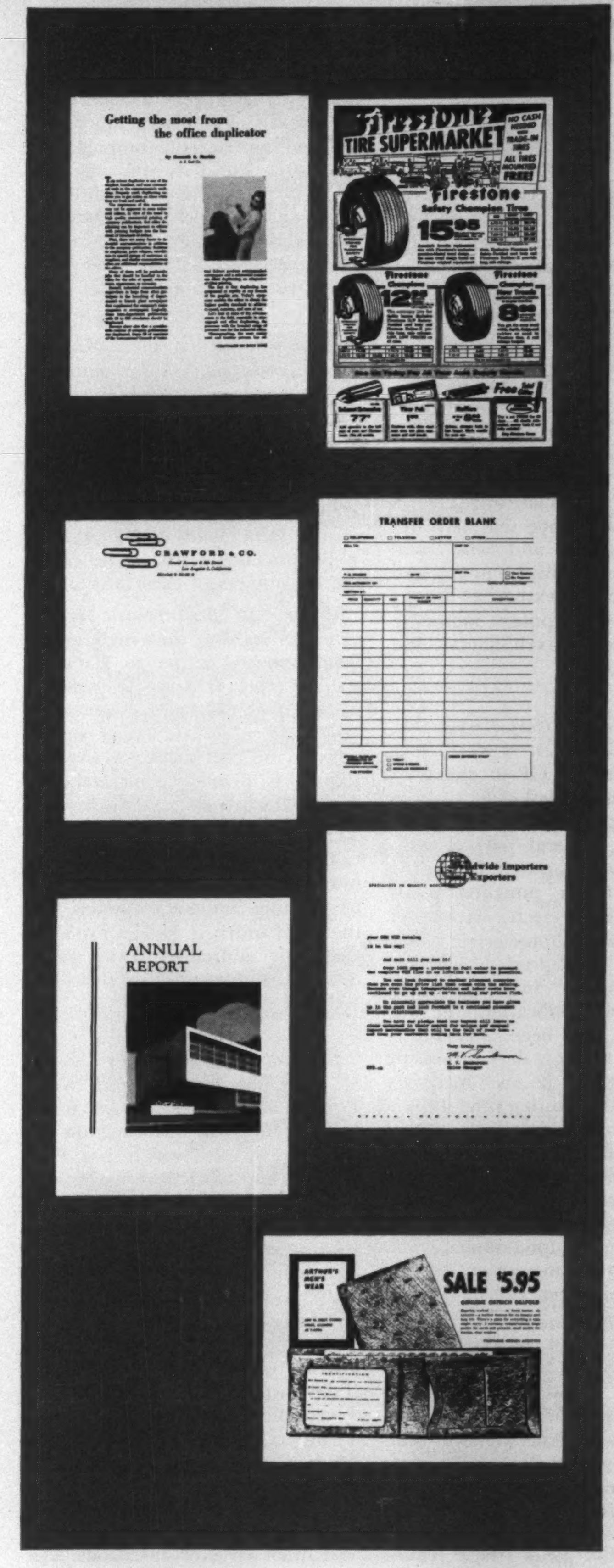
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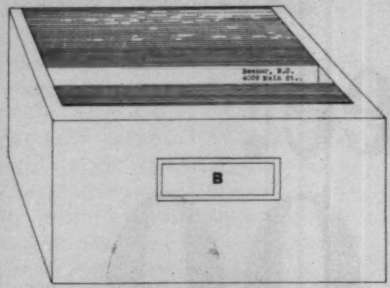

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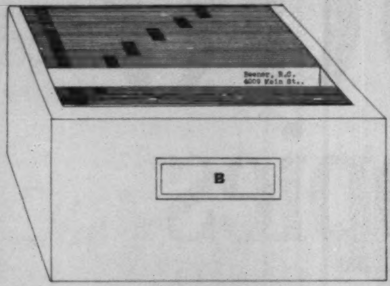

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high speed printers; punched-card-to-magnetic tape and magnetic-tape-to-punched-card converters.

Univac 120 and Univac 60 are smaller computers using punched card inputs, with particular adaptability to such operations as billing, production control, statistical work, and scientific and engineering problems. Univac File-Computer is medium size system, featuring random access; it is intended for business operations of the "on-line" type. Company also has an electronic punched tape typewriter, a development of the common language concept, which automatically creates and reads paper tape that activates other equipment and wire communications systems. Company also manufactures an extensive line of punched card equipment, including punches, sorters, tabulators, and so on.

Royal McBee Corp., Westchester Ave., Port Chester, N. Y. The Royal Precision LGP-30 electronic computer is a desk-sized, single-address, binary, stored program, fixed point, general purpose electronic digital computer. It features input-output via punched paper tape on integral electric typewriter or optional photoelectric tape reader and high-speed punch. Designed primarily for engineering and scientific application, the machine has also been successfully adapted to business data processing applications, such as inventory control, sales auditing, etc. It is a fully automatic computer in that its magnetic drum memory (4,096 words) allows loading of a complete program for directing machine operation on input data. Input-output is alpha-numeric, and data and programs are introduced into the computer via six-channel punched paper tape. Price is $49,500; it may be rented for $1,100 a month.

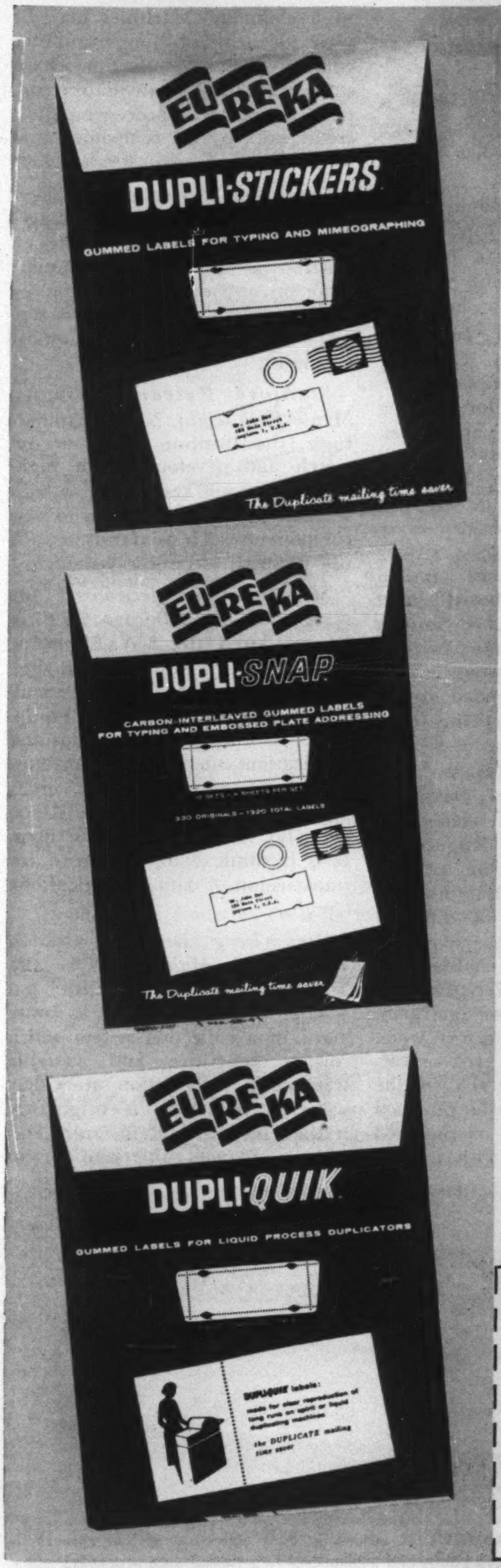
Keysort Tabulating Punch is complete, punched card installation in one machine. General functions of equipment are to code data automatically and internally into Keysort cards as a by-product of normal control total listing, then automatically sense these values and accumulate, print (on tape), and summary punch for any desired classification. It is being applied to such jobs as sales and order analysis, job costs, labor distribution, and payroll computation. Tabulating Punch is automated to the degree that it automatically senses values coded into Keysort cards, and prints and totals these values. Price is $3,410; unit may be rented for $85 a month.

Scriptomatic, Inc., 300-16 N. 11th St., Philadelphia 7. Firm produces the 101-S addressing machine, which is equipped for reading either IBM or Remington Rand punched card fields. This means that the equipment can be programmed to selectively print, sort, or count, based on the same fields of holes used by the punched cards, ledger cards, and other types of card media.

Model 301 Scriptomatic is designed to print at ultra-high speeds from punched cards to standard mailing tapes. It prints at speed of 30,000 to 40,000 addresses per hour depending upon secondary operations to be performed. A five-line address is printed from standard punched cards to a 7/8-inch wide tape.

The Model 10 Scriptomatic is an intermediate machine between the larger fully automatic models and the hand units; it is used for semiautomatic addressing. Price range is from $30 for small hand unit to $60,000.

Shepard Laboratories, Inc., Broad St., at Park Ave., Summit, N. J. Firm manufactures an electronic high-speed typer operating on the rotary principle, which has typewheels that spin continuously and in unison at 600, 900 or 1,200 rpm. There is no interference between reciprocating parts, according to the manufacturer, and typing rate is 600 to 900 lines per minute. The electronic typer is part of the company's electronic high-speed output system, which includes the Servo Transport Digital Tape Reader, Electronic Decoder, and Electronic Firing Group. The Electronic High-Speed Typers are in use as the output facility for RCA Bizmac Electronic Computers for the U. S. Navy, U. S. Army, U. S. Air Force, and other large organizations. Elec-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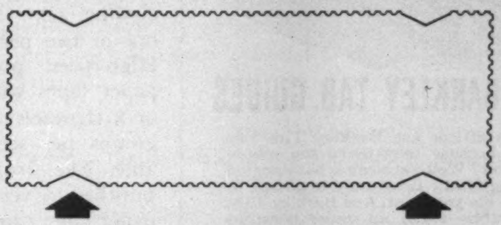

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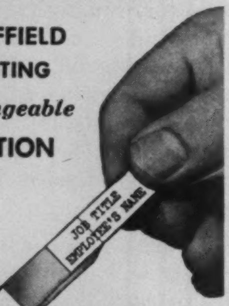

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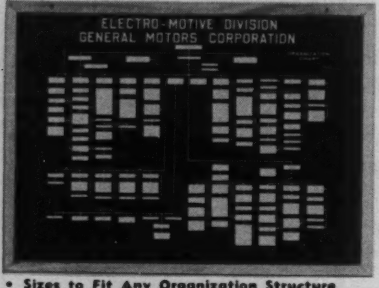

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tronic Typer with Firing Group is priced at $39,750; the Digital Tape reader is priced at $15,000. Rental provisions are offered.

The Shepard Electronic Mini-Typer produces "hard copy" at 10 lines per second, in 14 columns spaced 5 to the inch, with 64 characters.

Soroban Engineering, Inc., Box 1717, Melbourne, Fla. Company makes line of IDP components including tape readers for reading one or two perforated paper tapes. High-speed punches to perforate paper tapes with codes of 5, 6, 7, or 8 channels at rates to 300 code groups per second are also available. The firm produces verifying punches to verify data in punched paper tape; coding keyboard is used to compare re-entry of data with data in tape. Comparators to compare and detect discrepancies between two tapes intended to be identical are made by this company.

The Standard Register Co., Campbell & Albany Sts., Dayton 1, Ohio. Firm produces Stanomatic equipment which is designed to read magnetic codes on printed documents and convert information into a number of different common languages as required. Codes in 5, 6, 7, or 8 channels are pre-printed by special typewriters, registers, bookkeeping machines, imprinters, or at the factory when the forms are printed. Ink or carbon is read electronically in the machine. Outputs may be punched cards, magnetic tape, or punched paper tape, in codes with from 5 to 8 channels. Machines may be used for utility billing, insurance company premium collections, chain store operations of inventory control, cash balances, processing retail credit sales by oil companies, and so on.

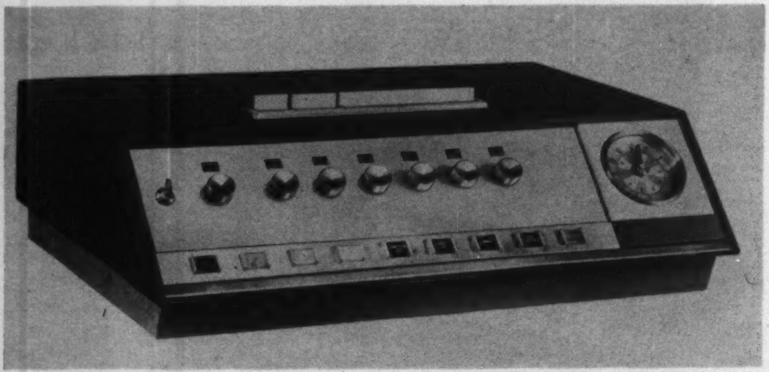
Imprinting device called Selectronic Imprinter makes images using a ribbon device from an electro-type chase or graphotype plate on any continuous form.

Also available is new forms separator called Form Flow Vertical Separator.

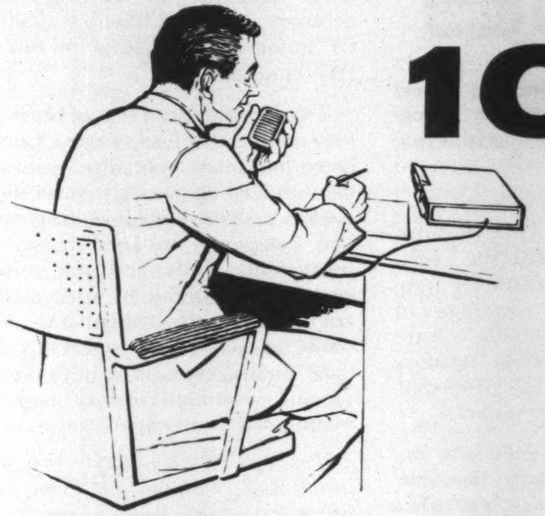
Stanford Research Institute, Menlo Park, Calif. Not a manufacturer, the Institute carries on research and development of high-speed electronic computing systems with special attention given to new components such as transistors, for use in small electronic systems.

Stewart-Warner Electronics, 1300 N. Kostner Ave., Chicago 51. Firm has produced the S-W Electronic Data Processing Unit, a small digital computer, desk-size, using standard electrical power sources. Equipment is designed for business applications such as sales analysis, inventory control, billing, order processing, etc. Product called Datafax also has been manufactured. It is facsimile equipment used for transmission of data over telephone circuits.

Stromberg Division, General Time Corp., Main and Elm Sts., Thomaston, Conn. Firm has TRANSACTER, which is automatic data collection system which collects repetitive and variable transaction information at widely scattered points as it originates; it then transmits it, instantly and without manual intervention, to



Stromberg Carlson's TRANSACTER automatic data collection system gathers information at widely scattered points and transmits it to a central data-processing office.



10 TIPS

to improve your letter writing

1. Relax. No matter how important the person to whom you are writing, he's a human being too. Talk as one human being to another.

2. Avoid introductory remarks — they're almost always dull. What do you have to say that is of greatest interest to your reader? Start talking about it immediately and proceed from there.

3. Concentrate on the reader, his feelings, interests and emotions. Write for him — forget yourself.

4. Use lots of You-words. Avoid I-words and We-words.

5. Don't try to make an impression — it will be as obvious to the reader as drinking tea with your little finger sticking out.

6. For a clear, forceful letter avoid unnecessary adjectives, adverbs and qualifying phrases. Cut out any that aren't absolutely essential to the purpose of your letter.

7. Stick to conversational words and phrases. Most people verbalize when they read. A letter that sounds easy and natural when you read it aloud is usually a pretty good letter.

8. Avoid writing while you are irritated. If you do, always hold the letter a day before mailing it. Read it again the next morning. Ten chances to one, you'll tear it up.

9. Be pleasant. A letter that smiles is a pleasure to receive. It's more effective too.

10. Save copies of letters you've written. Read them again six months later and see what you think of the person who wrote them. An honest appraisal — it isn't always pleasant — will help you write better letters in the future.

For more tips on good letter writing try BETTER LETTERS, the training program that produces results. More than 6,000 companies have used it to modernize their letter writing techniques.

The BETTER LETTERS program is a series of 4-page bulletins published at a rate of two each month. One is mailed on the fifth of the month, the second on the twentieth. Each bulletin contains the amount of information a person can easily absorb in one sitting and start to apply during the following 15 days. Then another bulletin comes along with more ideas.

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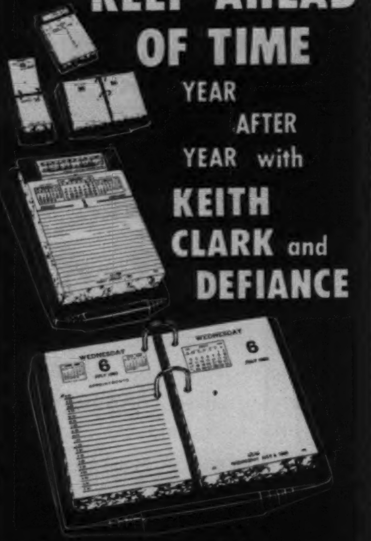

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the central data-processing office, where it becomes available immediately in universally machineable punched tape form.

Sylvania Electric Products, Inc., 1740 Broadway, New York 19. Firm has developed MOBIDIC computers, high-speed, completely transistorized digital computers of modular design. Computers have high-speed random-access memory unit which can operate over wide range of temperature variation.

Systematics, Inc., 10 E. 40th St., New York 6. Company manufactures Intercouplers — electronic equipment to interconnect two or more business machines so that as one is operated in a normal manner, the other (s) are operated automatically. Equipment is compatible with IBM cards, Remington-Rand cards, punched paper tape, (all channels), edge punched cards. All models handle alphanumeric information. Models are available for input and output application. Present models interconnect various machines made by National Cash Register, Friden, Remington-Rand, Olivetti, IBM, Teletype, etc. Also available is a line of tape-to-card, card-to-tape and tape-to-tape converters as well as tab card readers. Prices range from $590 to $5,000, depending on combination.

Firm also has Telepunch equipment for integrating punched card accounting with wire communications systems.

Technitrol Engineering Co., 1952 E. Allegheny Ave., Philadelphia 34. Firm has produced custom-built digital data handling equipment, and components from which electronic computer systems can be assembled. Included are the basic units of the data handling system itself and the accessory units such as power supply, cabinets, etc.

Telecomputing Corp., 12838 Saticoy St., North Hollywood, Calif. Company has manufactured the Point O' Sale Recorder for reading pre-punched merchandise tags and producing punched paper tape carrying the information coded in the tags, plus additional data entered manually by keyboard as necessary. Tape is then available for automatic processing in other IDP equipment.

The Teleregister Corp., 445 Fairfield Ave., Stamford, Conn. Company has made specialized equipment, including passenger inventory control systems used by transportation companies to keep track of reservations made and remaining space. New reservations when made are automatically taken into account to keep space status up to date. Equipment is used in network systems, with information records maintained centrally.

Teletype Corp., 1400 Wrightwood Ave., Chicago 14. Firm has offered extensive line of communications equipment, such as page printers, tape perforators, transmitter distributors, typing perforators, message relay equipment, and other IDP facilities. Some page printers, transmitter distributors, and perforators operate on 6-unit code.

Model 28 equipment is one of Teletype's newest contributions to

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the field of data communications. Units offer a wide choice of facilities for page printing, tape punching, and tape reading. They will operate at speeds ranging from 600 to 1,200 characters per minute, depending upon the application used. Functional features including sequential or multi-wire, input-output facilities, type-box printing, all-metal clutches and a built-in automatic function control device provide almost unlimited application facilities for handling data. This equipment is an integrated line, designed on the modular principle, permitting a wide choice and ready interchange of components plus accommodations for expansion.

Typatape, Inc., 60 E. 42nd St., New York 17. Company has developed method of recording data in common language form by means of mechanical attachments to standard business machines. It prints a 4-channel numerical code on paper tape ¼-inch wide, as a by-product of normal machine use. Tape is fed into a photoelectric scanning converter.

Underwood Corp., 1 Park Ave., New York 16. Firm has produced Dataflo, an integrated processing system based on "building block" concept of merged electro-mechanical equipment which produces a continuous chain of business communications as a swift by-product of any original typewritten record. The Mastertyper unit, a standard electric typewriter with 4-bank keyboard and automatic finger-letter code, prepares original business documents such as invoices, waybills, etc. Data can be entered from punched paper tape as well as manually. The Elecom is a small digital electronic computer and accounting machine with a magnetic disc storage unit.

Victor Adding Machine Co., 3900 North Rockwell St., Chicago 18. The electronic section of the Victor Adding Machine Co. has developed a new high speed transistorized analysis system called the Victor Class 100 which allows businesses to meet the problem of computing detailed cost, and sales and inventory figures. Designed to speed up accounting, forecasting, and planning procedures, it relieves office personnel of computing, classifying, tabulating, and inter-classifying tasks. System is composed of a central program unit to which is connected a Digit-Matic printer. It processes raw data in random form from punched tape. Reading at a rate of 1,000 digits per second, the program reader "selects" and adds related figures, then transmits them electronically to the solenoid-activated Digit-Matic which accumulates them. Price is approximately $12,000 with Digit-Matic Printer.

Victor Automatic Printing Calculator multiplies, divides, adds, and subtracts through one control and ten numbered keys. It features automatic constant division, automatic constant multiplication, and automatic credit balance. Price range is from $435 to $635.

Victor Data Transmission Control System is monitor for verifying wire-transmitted numerical data. It provides a means of pinpointing and eliminating errors that occur in transmission of data over long lines. System is easily adapted to existing transmitting equipment used in chain and branch operations as well as to railroad, truck line, and air freight operations. Basic component of the system is a Digit-Matic solenoid-operated adding machine. Price range is from $425 to $1,100.

Victor Data Punch is an integrated data processing device consisting of a Victor Custom Line full-

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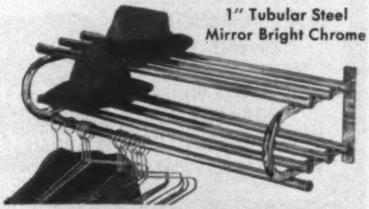

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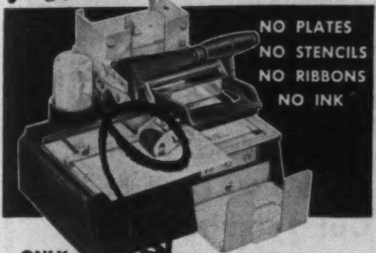

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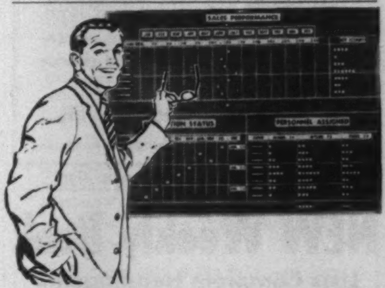

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keyboard adding machine which activates a tape punch. Machine expedites accounting, forecasting, planning, sales analysis, and inventory by speeding-up the flow of vital facts and figures. Price range is from $1,325 to $2,000.

The Western Union Telegraph Co., 60 Hudson St., New York 13. Company has produced IDP facilities which include nationwide network of transmission lines, and wide range of communications devices, such as sending and receiving page teleprinters, tape perforators for punching paper tape, switching center equipment, automatic numbering machines, sorting equipment, and facsimile equipment. Type 19 sets have also been made by this firm to record information in punched tape and transmit it.

Accessories and Services

American Lithofold Corp., 53 W. Jackson Blvd., Chicago 4. Electronic Check has prepunched tab card checks, on continuous marginal punched forms, with a side-stub perforation, mounted on Part 2 of the form, for use with tabulators, teletypers, and other equipment. Pocket Form for IDP tapes carries tapes in built-in pocket on back of form. Hand filing or fastening with clips or staples is unnecessary. Electronic Remitter incorporates the addressed envelope with account number, name, address, and amount of statement as an integral part of invoice or statement form. The return envelope stays with the statement until remitting customer makes payment.

Airmatic Systems Corp., 441 Market St., Saddle Brook, N. J. Automatic conveyor and pneumatic tube system for paper handling procedures.

Beemak Plastics, 7424 Santa Monica Blvd., Los Angeles 46, Calif. Firm makes tabulating card holders which may be installed on shelves, or in bins, boxes, and other containers.

Cycle Equipment Co., 17480 Shelburne Way, Los Gatos, Calif. Company has manufactured line of Universal Tape Minders and Standard Model Tape Minders for handling punched paper tape. The units are slave machines which start and stop automatically as tape is fed or as feeding ceases; designed for communications systems.

Dresser Products, Inc., P. O. Box 2035, Providence 5, R. I. Firm has punched tape accessories in the Tape-File line including envelopes, folders, winders, unwinders, files, searches, reels, and boxes.

Forms, Inc., Willow Grove, Pa. Firm manufactures line-hole continuous business forms.

Mac Panel Company, High Point, North Carolina. Firm makes control panels and wires.

Monarch Metal Products, Inc., MacArthur Ave., New Windsor, N. Y. Firm manufactures data processing auxiliary equipment. It offers an extremely large variety of acccessories and filing equipment for use with punched cards including Filaway cabinets and a com-

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plete line of items for the storage, handling, and moving of magnetic tape.

Moore Business Forms, Inc., 900 Buffalo Ave., Niagara Falls, N. Y. Firm makes Model 425 imprinter detacher for continuous forms or continuous tabulating cards. It will imprint, slit-off margins, detach forms to be imprinted, remove margins, detach, and stack forms in numerical sequence; also offered is an extensive line of forms for use in automated data processing systems with research facilities for the development of the forms required in such systems. Also available are the Formaliner and Vertical Spacer, devices for handling forms. Decollators and stands, imprinter-detachers, deleaving attachments, and other equipment are also available.

Also, Speeditacher, new portable detacher which is portable for on-the-spot use.

The Shaw-Walker Co., Muskegon, Mich. Firm has produced complete line of holders for filing punched paper tapes and edge-punched cards for all systems applications. Also File-Desk, which is a work station for Flexowriters.

Standard Instrument Corp., 657 Broadway, New York 12. Firm has Time Recorder Totalizer which continuously measures and records machine utilization.

The Standard Register Co., Campbell & Albany St., Dayton 1, Ohio. Company's IDP Workshop is used for the design and testing of forms use in IDP systems. The facilities are available for research. It also offers forms for IDP, together with accessory equipment for the handling of forms.

Systems Sales Co., 13 Broad St., Binghamton, N. Y. Company has produced line of storage equipment, sorting stands and carts for use in handling and storing tabulating cards, and for storing single, double, and triple control panels. Also available are accessories for use with electronic computers.

Tab Products Co., 995 Market St., San Francisco 3. Company produces long line of automation accessory equipment. Equipment may be generally classified as follows: Tabulating card filing and storage; tabulating card handling; tabulating card reference; control panel storage; magnetic tape filing and storage; and "spacefinder" files.

Recently developed Tab equipment can, with relatively minor changes, be used in conjunction with punched card tabulating installations, card activated computers, magnetic or paper tape computer systems, and analog computers.

Uarco, Inc., 7902 S. Ashland Ave., Chicago 20. Firm produces bursting machines which separate continuous tabulating cards. New Uarco Burster is equipped with high efficiency trimmer, and is capable of trimming up to 12 plies of fastened control punched forms.

Universal Business Machines, Inc., Columbia, S. C., P. O. Box 5183. Firm has Keytronic line of sorting machines.

Visirecord, Inc., Copiague, L. I., N. Y. Firm offers a variety of equipment for storage of IDP common language media, including filing cards of the "vertical-visible" type, with pockets for punched tape, or with cards themselves capable of being punched along an edge with IDP codes. Also offered are plastic tape panels, plastic channel cards, and Visisleeves, which provide visible indexing for use in random sesquence filing and finding of tape packs of variable lengths.

Wheeldex & Simpla Products, Inc., 40 Bank St., White Plains, N. Y. Firm manufactures mechanized rotary card files and offers equipment for housing IDP tapes for ready accessibility, either alone or in combination with related records. Simplawheel and Simplafind mechnized files may be used as the basic housing units. Simplawheel equipment is priced from $600 to $1,800; Simplafind equipment is priced from $3,000 to over $4,000. Wheeldex Portable Line consists of many smaller models carrying from 1,000 to 4,000 cards. Other Wheeldex models, either motorized or manual, contain from one to five wheels, and hold from 4,000 to 30,000 cards per cabinet.

Whiteford Laboratory, 420 Market St., San Francisco 11. Company has produced electric winder for common language tape with variable speeds and tension, and other features designed to operate automatically according to variations of output.

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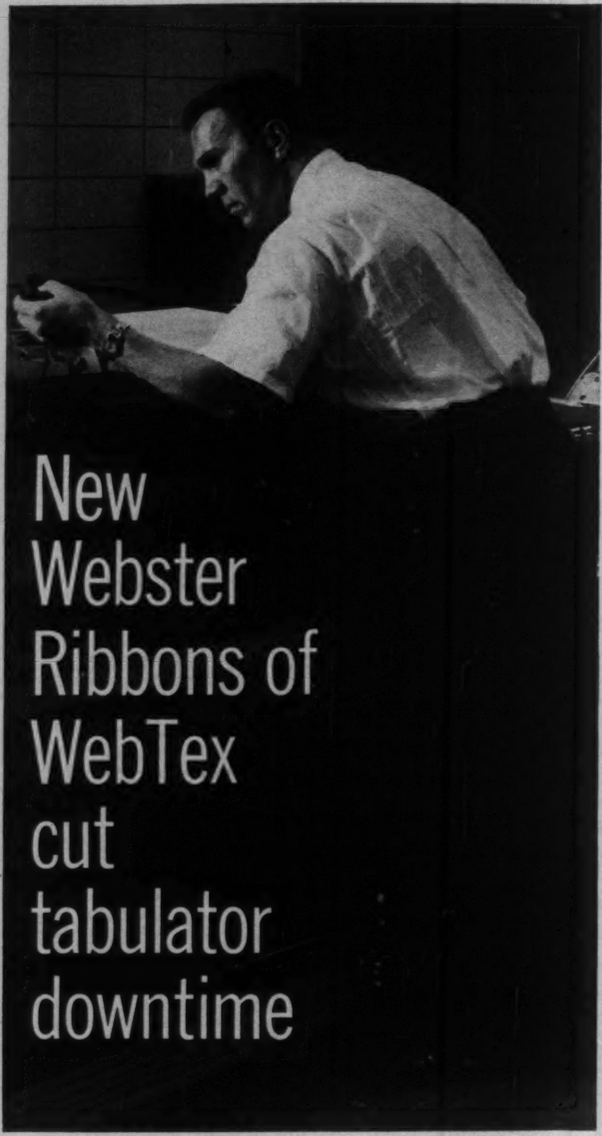
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CATALOGS

Automation **C-1**

Friden, Inc., 1 Leighton Ave., Rochester, N. Y. A 28-page booklet, "Friden IDP Products in Action," illustrates many of the company's products and their application to automatic letter writing, purchase order writing, sales orders, automatic check preparation for MICR, insurance policy writing, order entry-invoice, production orders, etc.

Mimeographing **C-2**

A. B. Dick Co., 5700 West Touhy Ave., Chicago 48. A 60-page handbook "Techniques of Mimeographing" is divided into sections for the mimeograph operator, typist, and artist. Methods of preparing and running stencils are described along with maintenance tips and various operating techniques.

Elevators **C-3**

Charles W. Lerch & Associates, Board of Trade Bldg., Chicago 4. "Facts and Counsel on Elevator Planning" is a brochure outlining the various services offered by the consulting firm.

Calendars **C-4**

Defiance Calendar Co., Inc., 1451 Broadway, New York 36. Calendars for 1961 are described and illustrated in full color catalog. Calendars for executive offices and general offices are depicted, as well as special wall calendars and weekly reminder calendars. Specifications are also given.

Paper **C-5**

Kimberly-Clark Corp., Neenah, Wisc. A new "Business Paper Selector Chart" printed on Texoprint plastic coated and impregnated printing paper recommends types of the company's paper to use for various office duplicating processes. The chart gives recommendations on papers for typewriters, spirit duplicators, stencil duplicators, and offset duplicators.

Label gluers **C-6**

Glue-Fast Equipment Co., Inc., 10 White St., New York. A four-page brochure describes ungummed label gluers designed to expedite shipping room procedures. Prices and specifications are included.

ERRATUM

In this section of last month's issue, under the heading of "Rotary Files," a 32-page booklet on rotary files offered by the Wassell Organization, Inc., was described. The address given at that time, 225 Union St., Mineola, N. Y., was, unfortunately incorrect. The Wassell Organization, Inc., is located at 225 State St., West Westport, Conn.

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FOR SALE: BRUNING COPYFLEX. Model #250. 3 years old. Perfect condition. $1,000.00. Parish Service Company, 19847 James Couzens Highway, Detroit 35, Mich.

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YOURS FOR THE ASKING

BOOKLETS

Bank checks **C-7**

"The Story of Checks," past, present, and future, was issued in response to requests by secondary schools for information on check collection in the United States. In one historical capsule the booklet reveals the clearing house as an innovation of bank messengers: a result of certain practical, however illegal, transactions made in English coffee houses by foot-weary bank employees. A short history of the American banking system ends with a clue to the character of banks of the future under the influence of automation. A glossary of fundamental banking terms is also included. Federal Reserve Bank of New York, 33 Liberty St., New York.

Company reports **C-8**

"If a report stirs up action, it is useful! If it never stirs up action, it is useless." These two statements contain, in a nutshell, the import of a booklet entitled "7 Marks of a Useful Report."

Usefulness of the company report can be enhanced, the booklet suggests, by system-planning: a matter of getting the results of business action to the man who can re-direct the action if it has gone astray. Also, factors that determine the cost of a report are itemized and presented as a handy index to production efficiency. Ross-Martin Co., P. O. Box 800, Tulsa 1, Okla.

Benefit plans **C-9**

"The Roles of Benefit Plans in Protection, Compensation, and Cost," is a booklet by Robert D. Gray, professor of economics, California Institute of Technology. Single copies are free to readers of *Office Management and American Business.* Industrial Relations Section, California Institute of Technology, Pasadena, Calif.

Filing **C-10**

Errors in filing procedures can be minimized by following the advice given in "Bright Ideas to Make Bright Girls Shine at Filing," a 16-page booklet of filing tips. Avery Label Co., 116 Liberty St., New York.

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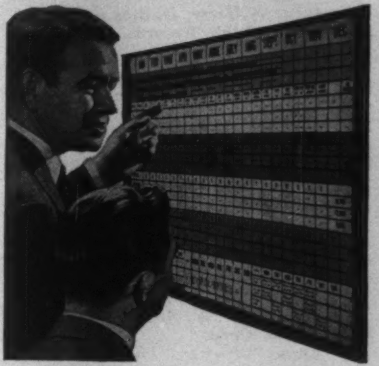

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Editorial

A PREDICTION COMES TRUE

IT is still fairly rare to find the person who is responsible for the overall paperwork operations of his company holding vice presidential rank in that company. But it is not as rare as it once was. We predict that it will become far more common in the near future, that heading administrative services will call for a vice presidency just as surely as heading sales or production does today . . . The importance of the administrative function to the company's prosperity and well being demands that the men responsible for this function be of the highest calibre *and* that they have authority within the company . . ."

The quotes above are from an editorial which appeared in the November, 1958, issue of this magazine. We believe that the story of the Administrative Services conference scheduled for October by the American Management Association indicates the rapid achievement of our two-year-old prediction. For not only is the subject matter of this conference the rapid expansion of the field and scope of "administration"—many of the speakers themselves fill the role we prophesied: they are Vice Presidents-Administration. Their companies: such blue chip concerns as Westinghouse, Fuller & Smith & Ross, Radio Corporation of America.

These men are speaking, not of a hopeful future, but of a present reality. They *are* part of top management now. For the functions that come under the aegis of the office now extend well beyond the perimeter of the office as we understood it yesterday. Every facet of the company is influenced, even to some degree determined, by just how effectively and smoothly these functions — now encompassing data processing, systems and procedures, management engineering and other major areas — are integrated and controlled. This is the office administrator's job today. It's a responsible job—a vital job. We are happy to see that at long last its importance and scope are being acknowledged.

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